

North Topsail Beach Shoreline Protection Project  
Final Environmental Impact Statement

**APPENDIX E**

**New River and New River Inlet Cultural Resources Remote Sensing Survey**

*Historical Research and a Submerged Cultural Resources Remote Sensing Survey  
New River and New River Inlet Channel Realignment  
Onslow County, North Carolina*



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## Abstract

Coastal Planning and Engineering, Inc. (CPE) of Boca Raton, Florida is currently working with Onslow County officials on a project to realign the navigation channel for New River Inlet and the lower portions of New River. In order to determine the proposed project's impact on potentially significant submerged cultural resources, CPE contracted with Tidewater Atlantic Research, Inc., of Washington, North Carolina to conduct a systematic proton precession magnetometer and side scan sonar survey of the proposed channel realignment. The proposed survey was designed to locate and identify submerged cultural resources in the study area and generate sufficient data to make an initial assessment of each target's significance and provide insight into the necessity for avoidance. Prior to the fieldwork, a program of historical and documentary research was carried out to provide a proper framework for submerged cultural resource assessment in the New River Inlet area. Field research was conducted on 5 October and 6 November 2004. Analysis of the remote sensing data revealed a total of 111 magnetic and/or acoustic anomalies. Of those, 29 were identified as having moderate or high potential association with shipwreck material and/or other submerged cultural resources. In addition, 14 of the 29 comprise four discrete clusters and may be associated with previously documented wrecks or cultural material observed along the western bank of New River. Unless those targets can be avoided additional investigation to identify and assess the material generating each of the signatures is recommended. Fifteen additional targets were also found to contain signature characteristics consistent with potentially significant cultural resources. Although these targets are located on a sandbar in extremely shallow water and likely represent debris associated with modern navigation in the inlet, a representative sample of three of the targets should be investigated to determine whether they are historically significant or modern debris. Should they prove to be significant cultural resources then the remaining 12 anomalies should be identified and assessed. The remaining 82 targets reliably appear to have been generated by single and/or clusters of ferrous objects such as small diameter iron rods, chain, cable, pipes, small boat anchors, traps or other modern debris. No additional investigation of those sites is recommended in conjunction with the proposed project.

## Table of Contents

	Page
Abstract.....	i
Table of Contents.....	ii
List of Figures.....	iii
Introduction.....	1
Project Location .....	2
Research Methodology.....	3
Literature and Historical Research.....	3
Remote Sensing Survey .....	3
Data Analysis .....	4
Historical Background of the New River Region.....	5
Previous Investigations.....	22
Description of Findings.....	24
High Priority.....	27
Moderate Priority .....	49
Conclusions and Recommendations.....	58
References Cited .....	60
Appendix A: Known Shipwrecks Located in the Vicinity of New River Inlet, North Carolina	
Appendix B: New River Inlet Survey Area Target List	



## List of Figures

	Page
Figure 1. Project location map .....	2
Figure 2. Ferry locations along New River depicted in Wimble 1738 map. ....	7
Figure 3. Illustration of the Swansboro built steamer <i>Prometheus</i> . ....	13
Figure 4. 1851 USCS map showing soundings of lower New River and New River Inlet. ....	14
Figure 5. Magnetic contour map, New River Inlet – north section. ....	25
Figure 6. Magnetic contour map, New River Inlet – south section. ....	26
Figure 7. Magnetic target NRI-21. ....	27
Figure 8. Magnetic target NRI-22. ....	28
Figure 9. Magnetic target NRI-27. ....	29
Figure 10. Magnetic target NRI-28. ....	30
Figure 11. Magnetic target NRI-29. ....	31
Figure 12. Magnetic target NRI-36. ....	32
Figure 13. Magnetic target NRI-38. ....	33
Figure 14. Magnetic target NRI-39. ....	34
Figure 15. Magnetic target NRI-40. ....	35
Figure 16. Magnetic target NRI-41. ....	36
Figure 17. Magnetic target NRI-42. ....	37
Figure 18. Magnetic target NRI-46. ....	38
Figure 19. Iron eye fasteners and rope exposed on west bank of river. ....	38
Figure 20. Magnetic target NRI-47. ....	39
Figure 21. Magnetic target NRI-51. ....	40
Figure 22. Magnetic target NRI-57. ....	41
Figure 23. Acoustic signature NRI-57. ....	42
Figure 24. Ballast rock exposed on west bank of river. ....	42
Figure 25. Magnetic target NRI-58. ....	43
Figure 26. Acoustic signature NRI-58. ....	44
Figure 27. Magnetic target NRI-59. ....	45
Figure 28. Magnetic target NRI-60. ....	46
Figure 29. Magnetic target NRI-66. ....	47
Figure 30. Magnetic target NRI-67. ....	48
Figure 31. Magnetic target NRI-07. ....	49
Figure 32. Magnetic target NRI-08. ....	50
Figure 33. Magnetic target NRI-10. ....	51
Figure 34. Magnetic target NRI-20. ....	52
Figure 35. Magnetic target NRI-25. ....	53
Figure 36. Magnetic target NRI-35. ....	54

Figure 37.	Magnetic target NRI-62. ....	55
Figure 38.	Magnetic target NRI-69. ....	56
Figure 39.	Magnetic target NRI-72. ....	57

## Introduction

Coastal Planning and Engineering, Inc. (CPE) of Boca Raton, Florida is currently working with Onslow County officials on a project to realign the navigation channel for New River Inlet and the lower portions of New River. To assess the proposed project's impact on submerged cultural resources, CPE contracted with Tidewater Atlantic Research Inc. (TAR) of Washington, North Carolina to conduct a remote sensing investigation of the proposed channel realignment.

The investigation was designed to provide accurate and reliable identification, assessment and remote sensing documentation of submerged cultural resources within the proposed realignment. The survey methodology was developed to comply with guidelines for submerged cultural resource surveys in North Carolina created by the North Carolina Department of Cultural Resources. Those guidelines follow the criteria established by the National Historic Preservation Act of 1966 (Public Law 89-665), the National Environmental Policy Act of 1969 (Public Law 11-190), Executive Order 11593, the Advisory Council on Historic Preservation Procedures for the protection of historic and cultural properties (36 CFR Part 800) and the updated guidelines described in 36 CFR 64 and 36 CFR 66. The results of the investigation will furnish CPE with the archaeological data required for complying with submerged cultural resource legislation and regulations.

Prior to the fieldwork, a program of historical and documentary research was conducted to provide a proper framework for submerged cultural resource assessment in the New River Inlet area. Field research was conducted on 5 October and 6 November 2004. All remote sensing operations were carried out from a shallow draft survey vessel. Magnetic data was generated by a GEOMETRICS 866 proton precession magnetometer and acoustic data by a MARINE SONICS 600kHz side scan sonar. A TRIMBLE AgGPS differential global positioning system (DGPS) was employed to provide sub-meter positioning and vessel navigation and data collection was controlled by COASTAL OCEANGRAPHICS' HYPACK MAX<sup>®</sup> survey software.

Analysis of the remote sensing data revealed a total of 111 magnetic and/or acoustic anomalies. Of those, 29 were identified as having moderate or high potential association with shipwreck material and/or other submerged cultural resources. In addition, 14 of the 29 comprise four discrete clusters and may be associated with previously documented wrecks or material observed along the western bank of New River. Unless those targets can be avoided additional investigation to identify and assess the material generating each of the signatures is recommended. Fifteen additional targets were also found to contain signature characteristics consistent with potentially significant cultural resources. Although these targets are located on a sandbar in extremely shallow water and likely represent debris associated with modern navigation in the inlet, a representative sample of three of the targets should be investigated to determine whether they are historically significant or modern debris. Should they prove to

be significant cultural resources then the remaining 12 anomalies should be identified and assessed. The remaining 82 targets reliably appear to have been generated by single and/or clusters of ferrous objects such as small diameter iron rods, chain, cable, pipes, small boat anchors, traps or other modern debris. No additional investigation of those sites is recommended in conjunction with the proposed project.

Project personnel consisted of principal investigator Gordon P. Watts, Jr. and senior archaeologist Raymond Tubby. Dr. Gordon Watts, Mr. Raymond Tubby and Ms. Robin Arnold prepared the report for production.

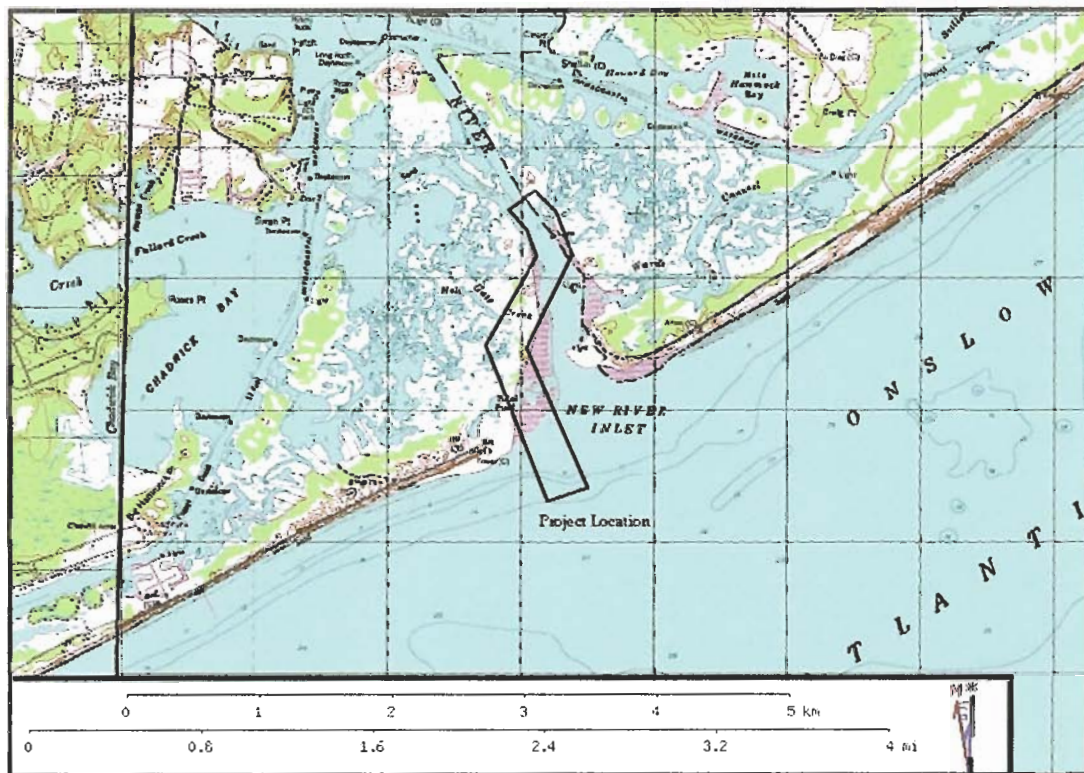


Figure 1. Project location map (7.5" USGS, New River Inlet, NC, 1997).

### Project Location

New River Inlet is located in Onslow County, North Carolina and is primarily fed by the New River and Stump Sound. The mouth of New River Inlet is located between Topsail Island and West Onslow Beach. The survey area extends from the 12-foot contour offshore of the New River Inlet bar approximately 4,600 feet northwest before turning north-northeast for approximately 2,500 feet (Figure 1). The survey area continued almost north for an additional 1,000 feet before heading northwest for 750 feet. Water depth in the survey area ranges between 0 to 12 feet. Coordinates for the study area in North Carolina State Plane, East Zone, NAD 83 are:

	Easting	Northing
A	2498579	292567
B	2498956	292114
C	2499184	291471
D	2498061	289201
E	2500574	285110
F	2501429	285637
G	2499206	289254
H	2500267	291401
I	2499844	292613
J	2499345	293210

## Research Methodology

### Literature and Historical Research

TAR personnel conducted a literature search of primary and secondary sources to assess the potential for finding significant historic and/or cultural resources within the proposed channel realignment. That research built upon and refined previous historical background assessments of the region developed by TAR. Preliminary wreck-specific information was collected from secondary sources that include: *The Encyclopedia of American Shipwrecks* (Berman 1972); *Merchant Steam Vessels of the United States 1790 - 1868* (Lytle and Holdcamper 1975); *Shipwrecks of the Civil War: The Encyclopedia of Union and Confederate Naval Losses* (Shomette 1973); *Shipwrecks in the Americas* (Marx 1983); *Shipwreck Encyclopedia of The Civil War: North Carolina, 1861-1865* (Spence 1991); *Shipwrecks of North Carolina* (Gentile 1992); *The Naval War of 1812: A Documentary History* (Dudley 1985); *Graveyard of the Atlantic* (Stick 1952); *Naval History of the Civil War* (Porter 1985) and other published materials. A survey of selected North Carolina newspapers and the *Wreck Information List* of the U.S. Hydrographic Office generated additional information.

Personnel at the Underwater Archaeology Unit of the Division of Archives and History (UAU) at Kure Beach, North Carolina were also contacted for shipwreck data associated with New River Inlet and the New River and Topsail Island area.

### Remote Sensing Survey

Field investigation of the study area was designed to accomplish two major research goals. The first was to employ magnetic and acoustic remote sensing equipment to identify anomalies with signature characteristics similar to those previously demonstrated to be associated with historically significant submerged cultural resources. The second objective was to assess each target signature and identify those that required avoidance procedures and those that could be

dismissed as indicative of modern debris. To accomplish these objectives, TAR personnel collected data with a proton precession magnetometer and a 600 kHz side scan sonar.

Working from 25-foot and 24-foot, shallow draft survey vessels, TAR personnel collected magnetic data with an 866 GEOMETRICS proton precession magnetometer capable of plus or minus 0.1 gamma resolution. To produce the most comprehensive magnetic record, the sensor was deployed approximately 30 feet aft of the DGPS antenna and maintained just below the water surface due to shoal water and potential snags and other debris visible within the water column and along the shoreline. Magnetic data was recorded as a data file associated with the computer navigation system and contour plotted using QUICKSURF<sup>®</sup> computer software to facilitate anomaly location and definition of target signature characteristics. Acoustic data was collected using a 600 kHz MARINE SONICS digital side scan sonar. The side scan sonar transducer was towed just below the water surface approximately 3 feet aft and 6 feet to starboard of the DGPS antenna. A 50-meter sonar range scale provided greater than 100% coverage of the bottom surface in the survey area. To ensure sufficient information would be available to locate any potentially significant targets in the project area, vessel speed was maintained at 3 to 4 knots and remote sensing data collected along lanes spaced on 50-foot intervals.

A TRIMBLE AgGPS DGPS was used to control navigation and data collection in the survey area. The system has an accuracy of plus or minus three feet, and can be used to generate highly accurate coordinates for the computer navigation system. The DGPS system was employed in conjunction with a Compaq 2.4 GHz laptop computer loaded with COASTAL OCEANOGRAPHICS HYPACK<sup>®</sup>MAX navigation and data collection software program. All magnetic and acoustic records were tied to positioning events generated by HYPACK<sup>®</sup>MAX. Positioning data generated by the navigation system were tied to magnetometer and acoustic records by regular annotations to facilitate target location and anomaly analysis. Annotations included lane number, event, date and target identification. All data were plotted to the North Carolina State Plane, Transverse Mercator Coordinate System, East Zone, NAD 83.

## Data Analysis

To ensure reliable target identification and assessment, analysis of the magnetic and acoustic data was carried out as it was generated. Using QUICKSURF<sup>®</sup> contouring software, magnetic data generated during the survey was contour plotted at 10-gamma intervals for analysis and accurate location of the material generating each magnetic anomaly. Magnetic targets were isolated and analyzed in accordance with intensity, duration, areal extent and other signature characteristics. Sonagram signatures associated with magnetic targets were analyzed on the basis of configuration, areal extent, elevation, target intensity and contrast with background and shadow image and were also reviewed for possible association with identified magnetic anomalies.



Data generated by the remote sensing equipment was developed to support an assessment of each magnetic and acoustic signature. Analysis of each target signature included consideration of magnetic and sonar signature characteristics previously demonstrated to be reliable indicators of historically significant submerged cultural resources. Assessment of each target includes avoidance options and possible adjustments to avoid potential cultural resources. Where avoidance is not possible the assessment will include recommendations for additional investigation to determine the exact nature of the cultural material generating the signature and its potential National Register significance. Historical evidence was developed into a background context and an inventory of shipwreck sites that identified possible correlations with magnetic targets (Appendix A). A magnetic contour map of the survey area was produced to aid in the analysis of each anomaly. All targets were listed and described (Appendix B) and a map produced that showed their location within the project area.

## Historical Background of the New River Region

Europeans first surveyed the New River Inlet region during the first quarter of the sixteenth century. In 1524, Giovanni da Verrazzano dispatched a small group of sailors to meet aborigines somewhere between New River Inlet and Bogue Inlet. The Florentine navigator was engaged by King Francis I to explore the American coast from North Carolina to Maine. Da Verrazzano also described the coastline of Onslow County in journals related to his surveys. Some sixty years later, according to Ralph Lane's chronicles of Sir Richard Grenville's expedition and John White's map [1585], the English, with the support of navigator Simon Ferdinando, fished in Onslow County waters on their way to establish a colony on Roanoke Island. Although Grenville and his companions disliked the Portuguese pilot, the ex-pirate was the "only skilled navigator alive with previous experience in negotiating the treacherous Carolina coastline (Glasgow 1966:120-121). Before John White arrived at Roanoke Island in 1587 to search for what today is known as the Lost Colony, he probably stopped on Onslow County's barrier islands. From White's last visit to the North Carolina coast in 1590 to the beginning of the eighteenth century [a period of extensive exploration] Europeans may have visited or settled the Onslow County area, although they left no documentary evidence.

Settlement along the New River drainage basin dates to the first quarter of the eighteenth century. According to *The North Carolina Gazetteer*, New River appeared as the Corani River on the 1729 Moll map and as New River on the 1733 Moseley map. The name New River Inlet also appeared on Moseley's chart (Powell 1968:350). Development began with an influx of English and Scottish settlers followed by Welsh and Irish colonists. The majority of these early settlers came by way of other American settlements, including a large number of families from the Albemarle region of North Carolina. There were also settlers who migrated south from Maryland, Virginia and the New England colonies. The first land grants made to attract settlers to New River were for tracts located on the sounds, rivers and major creeks, as the waterways provided the most convenient arteries of transportation and trade. New River became one of the

centers of early settlement much like other rivers up and down the eastern seaboard. The concentration of people along the river and its adjoining waterways prompted the construction of small craft utilized for local transportation. Dugout cypress canoes were among the first vessels built in the New River area. By the mid-eighteenth century, colonists also constructed cunners, rowboats, canoes, periaguas and small sailing vessels.

A September 1716 land grant made to Richard Anderson appears to be the first documented tract actually located along the New River. The conveyance implies that the place name New River was in use prior to the execution of that document (Littleton 1981:26, 33). As early as 1714, North Carolina Chief Justice Christopher Gale received a grant of 750 acres located between Bear and Brown Inlets. Justice Gale, like many early New River landowners never occupied the property and subsequently sold his parcel to Phillip Dexter (Onslow County Register of Deeds [OCRD] 1:25). Dexter had also received a grant for 640 acres on the west side of the mouth of Bear Creek. With his two brothers, Ebenezer and Hope, Phillip Dexter began to develop property along New River (Gwynn 1961:64).

Although initial population growth was slow, due at least in part to land speculation, a steady influx of colonists commenced circa 1720. By mid-November 1723, Charlesworth Glover acquired approximately 310 acres on the east side of New River. In May 1726, Hope Dexter received a grant for 640 acres of land along a tributary off New River called Mittum's [or Mittam] Creek. Prior to willing 320 acres of that tract to his brother Phillip in 1746, Hope moved to establish the town of Johnston there (Gwynn 1961:125). Within three months, a 60-acre tract on the east side of New River was granted to William Lewis, Jr. (Littleton 1981:34). Another 1726 deed identified a New River landowner named Charles Harrison. Harrison's deed for property along the west side of the mouth of New River referred to its former owner, Captain William Stone. At about the same time, 420 acres were granted to a Mary Lillington. Official records revealed that Mary Lillington had two resident neighbors, Stephen Howard and Andrew Clark (Littleton 1981:35). The Edward Moseley map [1733] shows the M. Lillington homestead situated along the New River.

By 1733, settlers from Bertie County increased the number of area residents to approximately 100 families (Lefler and Newsome 1963:72). Although waterways provided the major avenue of trade and transportation for early New River settlers, a roadway was cleared to connect the New River with New Bern on the Neuse River and Brunswick Towne on the Cape Fear River. Work must have been well underway by 1726, for in that year the Carteret court appointed Edmund Ennett as overseer for the segment connecting New River with the intersection of a cross path that led to the White Oak River. Ennett had previously resided along Brice's Creek and may have purchased New River property by 1723. The freeholder/juryman was also empowered by the Carteret court to operate a ferry service on New River just south of the mouth of Kisable Creek [contemporary Everett's Creek] where the roadways originated (Littleton 1981:37; North Carolina Division of Archives and History [NCDAH] 1728).





Figure 2. Ferry locations along New River depicted in Wimble 1738 map (Littleton 1981:39).

Another ferry landing located along the lower New River was utilized by 1731. During mid-November 1731, John Williams conveyed Ferry Point Plantation to Christian Heidelberg. Court documents suggested that Heidelberg resided on the 400-acre parcel and operated the Ferry Point landing before the transfer. The 1733 Moseley map illustrated the location of the "Heidelberg Ferry," while the 1738 Wimble chart simply identified the "Ferry" site (Figure 2). Although Heidelberg moved to another plantation on Stone's Bay, he continued to manage the ferry operation until his death circa 1741 (Littleton 1981:38, 60).

John Brickell surveyed North Carolina's barrier islands in 1729 and commented on the nature of New River Inlet, as well as nearby inlets. In *The Natural History of North Carolina*, the Irish physician wrote: "Between the Islands and Sand Banks, are Inlets of several depths of Water, some admitting only of Sloops, Schooners, Brigantines, and Vessels of small Burthen, and such [inlets] are...Bogue Inlet, Bear Inlet, Brown's Inlet, Little Inlet, New River Inlet, Stumpy Inlet, Sandy Inlet, and Rich Inlet...many of these being only Navigable for Periaugers and small Crofts, by reason of their many Shoals which are continually shifting by the violence of Storms, and particularly, North East Winds,..." (Brickell 1968[1737]:2). Brickell's observations were supported by Captain James Wimble's navigational chart of 1738. The New Carthage [Wilmington] cartographer identified the depth of the New "Rever" channel at only five feet, and noted that passages along some inlets were only suitable for "Conoas" and a "petaugo" (Cumming 1969:34).

In early 1731, the inhabitants of Topsail, New River and White Oak petitioned Royal Governor George Burrington to form a new precinct to make court functions and attendance less of a strenuous undertaking (Littleton 1981:43). On

23 November 1731, Governor Burrington, in conjunction with His Majesty's Council, issued an executive order to establish Onslow Precinct from portions of Carteret and New Hanover Precincts. Although the North Carolina Colonial Assembly refused to acknowledge establishment of Onslow Precinct at the 1733 Edenton assembly, the functions of local government continued until recognition was granted the following year (Conner 1919:144). Court sessions initially held in a private residence were shifted to a public structure following the construction of a suitable building on Jarrott's Point.

By 1739, Onslow Precinct was elevated to county status and the town laid off on Hope Dexter's Mittum's Creek tract was incorporated in 1741 (Littleton 1981:2). Located approximately 14 miles upstream from New River Inlet, Johnston was established by the Colonial Assembly in an "Act to lay out a town on or near Mittam's Point on New River by the name of Johnston." The act called for convenient streets, a square for public buildings and confirmed that lots would be available for ten shillings to anyone willing to build a "good substantial habitable framed house" within two years. Town justices were empowered to levy a tax of up to eight pence per year per poll to defray the cost of a courthouse structure. After New River's second courthouse, which had been constructed on Paradise Point, burned in 1744 all county functions were moved to Johnston. However, efforts to construct a new public structure were unsuccessful and sessions were held in private residences until a hurricane destroyed the entire town in September 1752. For five years, court was held at the residence of Jonathan Melton on the northeast branch of New River. Johnston, the first seat of Onslow County government, was never rebuilt.

When the town of Johnston was destroyed in 1752, the population of Onslow County had increased significantly and settlers had pushed well inland along the various branches of New River. As Johnston was no longer considered a suitable and convenient location for the seat of county government, New River settlers pressed for a change in location. A bill to repeal the act that established Johnston as the seat of county government was passed in 1755. That same act designated Wantland's Ferry as the new location for the county courthouse and directed the Onslow justices to erect a new structure complete with pillory, prison and stocks within six months.

In January 1756, James Wantland agreed to provide the Onslow County Magistrate Justices with one acre of land in the vicinity of the ferry landing on his plantation. Wantland's acre was to be convenient to the river and a spring, and would provide a suitable location for the proposed courthouse. Adjacent to the site, the justices were to design a town composed of small lots that would be sold for 20 shillings each. Formal plans for the town continued and in July 1757, the court ordered the Commissioners of Roads "do lay out and make a road from the southwest Bridge to the ferry opposite Wantlands and from Wantlands the nearest best way to the Northeast Bridge and Northwest of each side." Also in that month, rates for the ferry were established: 6 pence for man and horse and 4 pence for a pedestrian and the county treasurer was ordered to pay the ferryman for the passage of jurors and justices from tax revenues (NCDAH 1757).

By 1759, Richard Whitehurst sold the New River lower ferry property to his son-in-law, Robert Snead. Snead operated the ferry on the north side of the river throughout the Colonial period and resided at Ferry Point (Littleton 1981:60). Contemporary land records [1764] related that the entrepreneur also managed a tavern and ordinary for travelers. Another New River resident was also licensed to operate a tavern near his landing on the south side of the river. John McKinney managed the lower ferry from 1768 until 1770, when the venture was renamed as the Lewis Ferry (Littleton 1981:61). From all accounts, the Colonial period ferries at New River were simple in design and in construction. Snead's primitive vessel was "described as an [sic] 'ordinary bauble' which floated no more than two or three inches above the water" (Littleton 1981:61).

Onslow County's economy during the Colonial period was based primarily on forest products, agriculture and fishing. Naval stores, the extraction of tar, pitch and turpentine from the coastal pine forests, were the region's chief exports. North Carolina placed first among the British colonies in production of this lucrative commodity and Onslow County ranked as high as fourth within the colony. Small farms dominated agricultural settlements during the period because the region's sandy soils and shallow inlets and rivers inhibited the development of a plantation system. Corn and peas constituted the principal consumables, while rice, indigo, flax, cotton, hemp, fruits and other vegetables were harvested on a smaller but significant scale (Louis Berger Group [LBG] 2002:8). An account ledger kept by New River merchant Robert Hogg confirmed that affluence for most Onslow slaveholders was generated from the sale of naval stores, hides and pickled beef and pork (Littleton 1981:65).

Other merchants that owned and/or operated New River interests were Gibbeon Jennings, Edward Ward, Richard Ward, James Howard, Richard Farr, William Gibbs and French & Cray [Joseph French, Jr. and William Cray, Sr.] (Littleton 1981:70-72). When the ship *St. Andrew* arrived at Beaufort in October 1759, the vessel's agent was identified as Richard Farr of New River. According to the *North Carolina Gazette*, Farr exchanged local goods that included tar, deerskins and fur for manufactured goods from London. Shipping records also indicated that the sloop *Cynthia* regularly carried naval stores to Wilmington and Brunswick, and returned to New River with cargoes of "sugar, rum, salt, hardware, and general merchandise" (Littleton 1981:71).

Grist milling constituted another major industry in Onslow County. Mills were in operation in a number of places along the New River basin including French Creek, Wallace's Creek and the area between Stone's Creek and Southwest Creek (Littleton 1981:66). New River residents who owned mills included Christian Heidelberg and William Hadnot. Fishing and whaling provided area residents with supplemental income on a seasonal basis. Several early and mid-eighteenth-century wills probated in Onslow County listed bequests of whale boats and/or whaling gear (Littleton 1981:68). As a consequence of these industries, inspection laws enacted in 1755, 1758 and 1764 named New River Inlet, Bear Inlet and Bogue Inlet as official export locations (Littleton 1981:68).

The reliance on water for transportation and trade prompted sporadic attempts to improve navigation on New River. The Colonial legislature passed some initiatives to artificially deepen the river in 1741, 1760 and 1761. Because the depth of water through Bear Inlet was greater than that at New River Inlet [8 to 11 feet versus 3 to 5 feet] efforts were directed toward improving navigation from Howard's Bay, near the mouth of New River to Bear Inlet. Advocates of the 1760 legislation desired funding to "allow loaden pettiaguas and other boats of 50 barrels burthen to pass and repass from New River to Bear Inlet." During the following year, three commissioners [who were New River property owners] raised funds to clear and remove rock or shell, and cut through the marsh that fronted New River Inlet (Littleton 1981:69, 70; Watson 1995:17). Overall, those projects were largely unsuccessful and navigation remained problematic for the rest of the eighteenth century and well into the nineteenth century.

The New River area was not impacted, to a large extent, by the activities of the American Revolution. However, many prominent New River landowners and merchants were involved in the political events leading to the war and subsequent military actions. Prior to the Declaration of Independence, two principals of French & Cray, William Cray and Joseph French, joined New River merchants Seth Ward, Edward Ward and Robert Snead to serve on the Onslow Committee of Safety in April 1775. One of the committee's first and primary responsibilities was to enforce the ban on sales of local naval stores to the British (Littleton 1981:102-103). Although Parliament had exempted North Carolina from the Restraining Act of 1775 that prohibited colonial trade with Great Britain and the West Indies, the Continental Congress recognized the significance of the exclusion. The colonies of North Carolina, Georgia and New York were the main producers of naval stores and the Royal Navy needed those commodities. Therefore, the Committee of Safety's ban on selling naval stores to England would strengthen the American cause.

In April 1776, the Fourth Provincial Congress approved plans to raise five independent companies to protect the American seacoast. One company was tasked to patrol the area between Bogue Inlet and New River, while a second unit was assigned to patrol the area south of New River to Deep Inlet. By late November 1776, Captain Selby Harney's Bogue Inlet-New River company was disbanded and that section of the coastline was left unprotected (Littleton 1981:104-105). As the first anniversary of the signing of the Declaration of Independence passed, Onslow justices ordered all suspicious persons and avowed Tories to profess allegiance to the new government. According to court documents, five Tories were arrested at New River and were executed at Kinston (Littleton 1981:105).

In December 1778, the French vessel *Conquerant*, a British prize, entered Little Inlet [located between New River and Brown's Inlets; open to navigation until the late nineteenth century (Littleton 1981:41)] after it separated from the British fleet during a severe storm. After crossing the inlet in a smaller boat, the British disembarked near the mouth of Gillett's [Gillets] Creek to search for rations. Unfortunately for the Royal Navy detachment, New River merchant William Hadnot was present at the site to tend his salt works (Littleton 1981:111). Other

New River residents soon assembled and the British seamen were arrested. The disposition of the *Conquerant* and its cargo was later argued at an admiralty court at Bogue [Swansboro] (Littleton 1981:105).

British forces did not seriously threaten the safety of New River residents until 1781 when Wilmington was occupied. The British presence there disrupted travel along the North Carolina coast and enemy troops pillaged the surrounding countryside. In February 1781, Colonel Mitchell dispatched Onslow soldiers to the lower Cape Fear region to assist American efforts to repel the British. During that same month, North Carolina officials decided to resume coastal defense patrols, and mustered troops to defend the coastline of Onslow County and to fortify the mouth of the White Oak River.

In mid-July 1781, American General Alexander Lillington reported that British forces had sacked the homesteads of several New River Chapel residents but that the enemy had returned to Rutherford's Mill [Northeast Cape Fear]. In August, the British revisited the New River region and occupied the plantation of Lewis Williams (Littleton 1981:107). Locals were then warned that the British intended to destroy all area salt works. The import of salt had been virtually curtailed during the war, and many New River residents had resorted to boiling seawater to obtain that valuable product. For unknown reasons, the Onslow salt works were spared. After Cornwallis surrendered at Yorktown on 19 October 1781, British soldiers evacuated Onslow County and the whole of North Carolina.

Although the courthouse generated a variety of activities at James Wantland's Ferry, development after the war was measured. The first structures in the immediate vicinity of the courthouse and ferry were ordinaries established to provide accommodations when court was in session. Ordinaries were also established at convenient points along most of the major roadways in the colony. In July 1784, Bannister Lester was appointed Public Inspector "above the forks of New River, also Courthouse landing and opposite side" (NCDAH 1784). Samuel Simmons was appointed to continue the service as Public Inspector of Naval Stores "at Courthouse Landing" in 1791 (NCDAH 1791). Designating Wantland's Ferry as an inspection port no doubt increased public activity as New River vessels carried out an extensive coastal trade. Other inspection ports were located at Bogue Inlet, Bear Inlet, New River Inlet (1755, 1758 and 1764), Week's Landing [Swansboro], French's Landing [Frenchs Creek] and Todd's Landing (1770) (Littleton 1918:68). An inspection law enacted in 1784 listed numerous exports from the New River region that included "beef, pork, rice, tar, pitch, turpentine, fish, flour, butter, flax seed, staves, heading, sawed lumber, and shingles" (Littleton 1981:111). Within two years, the North Carolina Assembly passed legislation to place Bogue, Bear, and New River Inlets within a new customs district that was named Port Swansborough. At that time, New River merchant Robert Snead was also appointed as a judge for the port's maritime court (Littleton 1981:113).

Swansboro's importance as a shipping center led to the North Carolina legislature designating the town as a state port in 1787. The value of trade entering the port, however, was never very large. Shipping records for the

period 1 July 1789 to 10 March 1790 revealed that only 22 sloops and schooners entered the port (Watson 1995:55). Most of this trade was from South Carolina merchants. Exports included naval stores, wood products, tobacco, cotton and foodstuffs such as bacon, pork, chickens, corn, peas and other produce. Area merchants also found markets for natural resources like beeswax, snake root, deerskins and fish. Imports consisted of salt, molasses, rum, dry goods and foodstuff not produced locally. Prior to the War of 1812, merchant Christopher Dudley [or Dudley] conducted a brisk trade based at New River. On 9 March 1799, the schooner *Sally* wrecked east of New River bar during a return trip from Charleston. According to historian Wilson Angley, artifacts that included late-eighteenth-century money and merchants' seals were discovered at the probable wreck-site during the early 1980s (Angley 1982:2).

Prior to 1800, a salt manufacturing facility may have been constructed on an islet later called Wright Island. Documents revealed that William Montfort and three other gentlemen "purchased an unnamed island near the mouth of the New River" during the 1790s. A later reference to Montfort's Landing suggested that the saltworks was located at the mouth of New River on the eastern side. A large accumulation of ballast near the west side of the inlet would support the historical site of the Wright Island saltwork (Angley 1982:3).

Despite its diversified economy, an out migration of population occurred during the early nineteenth century. This "Great Exodus" resulted in the loss of some of the largest and wealthiest landowners in the county. This move was driven by five factors: land grants for military service in the Revolution and War of 1812, availability of cheap land in the west, better cotton land in the west and south, higher prices elsewhere for hiring slaves and a decline in the productivity of the area's heavily farmed sandy soils (LBG 2002:9). As a result, Onslow County remained rural and was slow to develop, expanding by 1,840 residents in the 40-year period between 1820 and 1860 (Littleton 1981:122).

Although there was sufficient population to warrant establishing a United States post office at Wantland's Ferry in 1814, the town did not develop rapidly. As late as 1821, local newspapers carried advertisements to encourage the sale of lots laid off around the court house (*New Bern Sentinel*, 21 April 1821). It was not until two decades later, on 13 December 1842, that the North Carolina General Assembly authorized the town's incorporation and designation as Jacksonville in honor of Andrew Jackson. As the first commissioners of the town of Jacksonville failed to meet the qualifications for that office, the General Assembly dissolved the act of incorporation and passed a second on 27 January 1849 (Onslow County Historical Society 1983).

Although the early growth of Jacksonville was relatively slow, by 1830, large local industries (naval stores, salt works and shipbuilding) had developed along the banks of the New River and Onslow County. Because of its extensive pine forests Onslow County remained fourth in the state in production of naval stores. The value of its forest products rose from \$16,000 annually in 1820 to



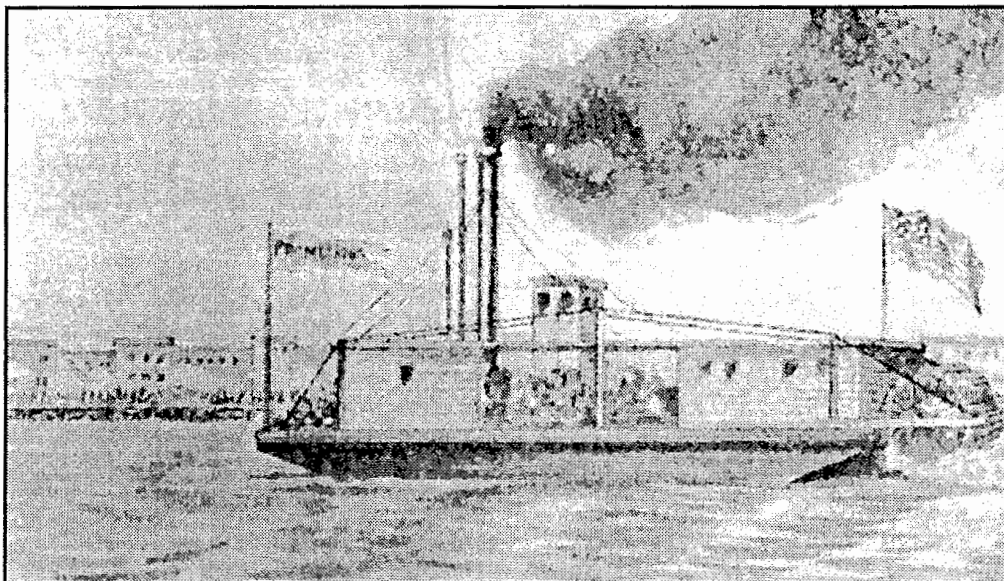
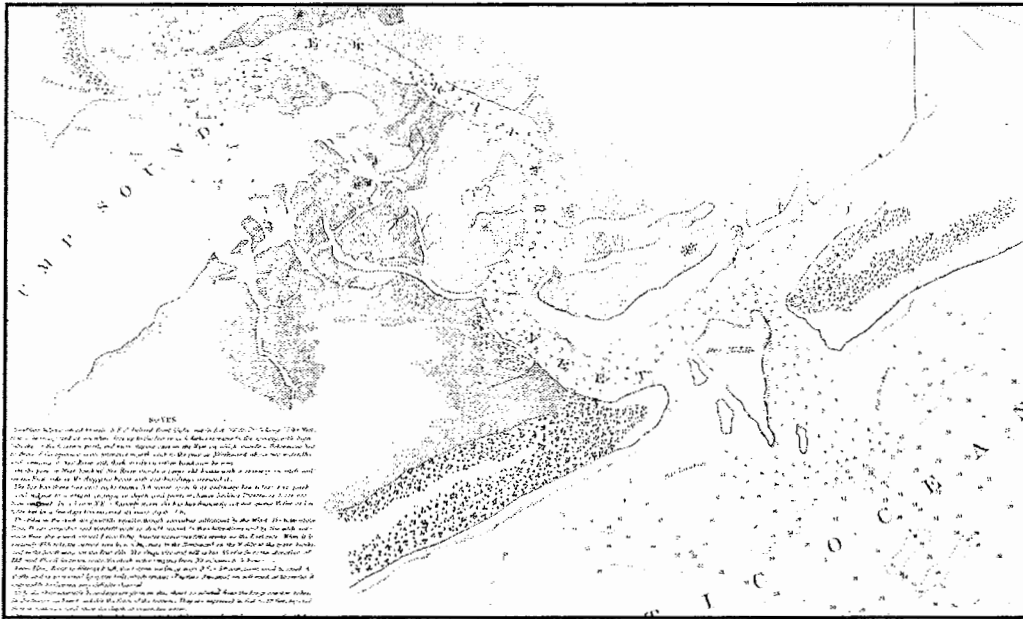


Figure 3. Illustration of the Swansboro built steamer *Prometheus* (Watson 1995:51).

approximately \$219,000 by 1850 (Watson 1995:49-50). By the middle of the century, six steam turpentine distilleries and 24 tar and crude turpentine distilleries were in operation in Onslow County.

Shipbuilding factored as another important part of the economy during the nineteenth century. Between the American Revolution and the end of the War of 1812, the county produced 15 schooners, 6 brigantines and 3 ship-rigged vessels (Watson 1995:50). Swansboro shipwrights produced the majority of those vessels. New River builders were limited in the size of their vessels and scope of their operations by the shallowness of the New River bar, which rarely exceeded six feet of water. Construction continued to expand after the wars. Between 1815 and 1861, a total of 35 ocean-going vessels, 32 schooners, 4 brigs and 1 sloop were produced in Onslow County. Of those vessels, only 16 were constructed by New River shipwrights. Steam vessels were also built in the area. In 1818, the stern-wheeled *Prometheus*, the first steamer built in the state, was constructed in Swansboro (Watson 1995:50-51). The vessel operated on the Cape Fear River until abandoned in 1825 (Figure 3). In 1836, the 199-ton side-wheel *David W. St. John* was constructed on New River and sold to Georgia interests for operation on the Savannah River.

The flow of commerce was assisted by the construction of a series of canals during the 1850s and improvements to navigation (*Weekly Wilmington Journal* 2 October 1845). In 1791, the North Carolina General Assembly incorporated the Commissioners of New River Navigation to raise funds for clearing the shoals at the mouth of the New River. The commission was reincorporated again in 1811 to clear the river from Sneads Ferry to the mouth and in 1816 the New River Canal Company was established to cut a channel through the marsh at the



**Figure 4.** 1851 USCS map showing soundings of lower New River and New River Inlet (Guthorn 1984:111).

mouth of the river and to clear the river from its source (Watson 1995:53). These early efforts to improve navigation on the New River appear to have been ineffective.

After 1800, the North Carolina legislature appointed the Internal Improvement Committee to “promote and encourage private investments in transportation improvements.” Although the committee’s strategy to place a significant financial burden on private interests failed, the state did acquire stock in several river improvement companies. As a consequence, a small appropriation was made for the New River (White 2002:87-88). In 1836, 1837 and again in 1838, Congress appropriated funds to remove the oyster bank at the mouth of the river (Littleton 1981:124-125). A survey of the lower New River in 1850 revealed that the problematic oyster bar was still present.

Naval personnel acting for the United States Coast Survey (USCS) examined the bottom surface that extended from Piney Point due north to Wilson’s Bluff in November 1851. Data from sounding lines indicated that: “the bottom varies ..., from mud to sand & shells, and is so covered by oyster beds, which consist of oysters deposited on soft mud, as to render it impossible to discern any definite channel” (Guthorn 1984:111). Lieutenant John Newland Maffitt’s reconnaissance of New River and New River Bar also recorded the hazardous conditions within New River Inlet (Figure 4.). In addition, Maffitt described the project area’s coastal topography and some shoreline landmarks thus:

New River Inlet is about 44 miles N.E. of Federal Point Light and in Lat. 34°30' 30" N. Long. 77°43' [0"] West. It may be recognized at sea when close up to the bar or in 4 fathoms water by the opening, with hillocks on



the Eastern point, and more sloping ones on the West, on which stands a fisherman['s] hut. In front of the opening is an extensive marsh, and to the rear or Northward about two miles, the wide opening of New River with thick woods on either bank can be seen. ... The bar has three feet and eight tenths 3.8 water upon it at ordinary low tides: it is quick sand subject to constant changes in depth and position, hence Sailing Directions have not been verified. In a heavy N.E. Easterly storm the bar has frequently cut out, giving 15 feet at low tide, but in a few days has resumed its mean depth 3.8 (Guthorn 1984:111).

As a result of Mafitt's findings, an 1851 River and Harbor bill appropriated federal funds to resurvey the lower New River. According to a December 1851 edition of the *Wilmington Journal*, surveyors reported that the "sole obstruction which they had found at the mouth of the river was an oyster bed 600 yards long which they believed could be removed by a single engineer, a dredge boat, and two laborers working three months" (Littleton 1981:125). During 1852, the State of North Carolina incorporated two companies that expressed interest in those navigation improvements. Although several influential New River leaders were involved in both firms, no maritime improvements apparently occurred.

In 1855, the state legislature incorporated the New River Navigation Company [the second by that name]. Civil engineer S. Thayer Abert [or Albert] was retained to complete a preliminary survey and within one year, Captain William Weaver reported that a depth of five feet had been obtained at New River Inlet, with an ultimate goal of seven feet (Littleton 1981:125). However, by 1859, the project was abandoned and "the dredge and dumping boats had been laid aside and allowed to sink." Subsequently, the state donated those vessels to the Town of Beaufort (Littleton 1981:125).

In 1856, a dredge was built in Jacksonville to improve and deepen the channels leading to the town. Within two years, Congress declared Jacksonville a port of entry and that act also provided federal assistance to conduct improvements in the New River (*American Advocate*, 28 September 1859). Although a channel that measured 1,975 yards long, 25 to 60 feet wide and 7 seven feet deep was excavated by 1857, the project was considered a failure (Watson 1995:54). Initiatives to construct canals between New River and Brown's Inlet and New River and Swansboro also failed to accomplish their goals.

Further development along New River was disrupted by the American Civil War. After Confederate forces in South Carolina attacked the U.S. garrison at Fort Sumter, President Abraham Lincoln declared a state of open rebellion and called for volunteers to preserve the Union. On 19 April 1861, Lincoln issued a proclamation to establish a blockade of Confederate ports in South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana and Texas. Eight days later, the blockade was extended to include ports in Virginia and North Carolina. In early May, North Carolina Governor John W. Ellis authorized the sinking of numerous vessels in Bear Inlet to deter Union penetration of that inlet (Littleton 1981:134).

In late September 1861, E. L. Perkins wrote Governor Ellis's successor [Henry T. Clark] that New River, Bear and Bogue Inlets "were entirely defenseless and could easily admit vessels drawing 7 or 8 feet of water" (Littleton 1981:134). Union activities soon confirmed that Perkins's fears were well founded. The many salt works scattered along the coastal marshes and livestock grazing on the barrier islands offered easy targets for Union raids. On 17 December, sailors from the Federal barque *Gemsbok* landed near the mouth of the New River along the north banks. After they slaughtered cattle that grazed there, the men crossed New River and were observed on the south side of the inlet. From that position, the Union force boarded a small schooner anchored inside the mouth of the river (Littleton 1981:135).

The Union sorties in October and December 1861 clearly demonstrated the need for Confederate fortifications along the coast. To prevent similar raids, a small six-gun battery was constructed on the south side of Bogue Inlet on Huggins Island. In the interim between Secession and fortification of that island, the Confederate Military and Naval Branch created two departments of coastal defense for the state. The northern division extended from Norfolk, Virginia to New River, while the southern division extended from New River to the border with South Carolina. Despite the obvious military importance of New River Inlet, the modest measures taken to hinder Union strikes along the Onslow coast failed.

The fall of New Bern in March 1862 opened Onslow County to several incursions. In August, Union forces briefly occupied Swansboro on two occasions and on 23 November 1862 Lieutenant William B. Cushing led an expedition against Jacksonville. Although he was only nineteen years old, Cushing had recently taken charge of the USS *Ellis* due to his valor at the Battle of Blackwater River (Schneller 2004:44-45). The *Ellis* was stationed in the vicinity of Bogue Inlet to "intercept any Rebel trade" at Beaufort. However, tiring of the lack of activity near Bogue Cushing ordered the *Ellis* to New Topsail Inlet without first seeking authorization. At New Topsail, the *Ellis* seized the schooner *Adelaide*, loaded with 600 barrels of turpentine, 36 bales of cotton and some tobacco for Bermuda (Schneller 2004:46). Though chastised by superiors for leaving his station, Cushing's conduct during the *Adelaide* affair and his subsequent destruction of a large salt works near Topsail Inlet on 29 October 1862 led to a grant of carte blanche or a "roving commission" by Commander Henry Davenport, the senior naval officer in the North Carolina sounds (Schneller 2004:47).

Encouraged by the award of such an unusual directive, the *Ellis*'s commander turned his attention to a raid on Jacksonville. On 23 November, Cushing steamed into New River Inlet and proceeded to head 35 miles upriver to the county seat. His stated mission was "to sweep the river, capture any vessels there, capture the town of Jacksonville, or Onslow County Courthouse, take the Wilmington mail, and destroy any salt works that I might find on the banks" (The National Historical Society [TNHS] 1987 I, 8:230-231). At a point five miles above the mouth of New River, the *Ellis* encountered an outbound vessel, loaded with turpentine and cotton, that had been fired to prevent capture by Federal

forces. By early afternoon, he reached Jacksonville, positioned pickets and placed guards at all the public buildings. Within only 90 minutes, Cushing's naval unit captured 25 public weapons, a large quantity of mail, two schooners and slaves that belonged to the Confederate postmaster.

On returning down river, the *Ellis* paused briefly to shell an unidentified encampment on the banks. The gunboat was forced to stop again near the mouth of New River to silence rifles from the still burning schooner that had been encountered earlier in the day. At dusk, the *Ellis* anchored approximately 5 miles from the outer bar with its prizes to await the rising tide. At daylight, the vessel came under fire from Confederate artillery and during the ensuing exchange of gunfire the *Ellis* grounded hard on a shoal. Unable to free his ship and concerned by a possible attack, Cushing transferred everything "excepting the pivot gun, some ammunition, 2 tons of coal and a few small arms" aboard one of the prize schooners and order his men, except for six volunteers, to "drop down the channel out of range from the bluffs, and ... to wait for the termination of the impending engagement (TNHS 1987 I, 8:231-232). On the following morning, Confederate forces opened fire on the *Ellis* with heavy rifled guns significantly damaging the vessel's engine and hull. Unable to save his ship, Cushing ordered the *Ellis* fired and retreated downriver in surfboats to the awaiting prize ships.

In 1864, Union forces conducted additional forays into coastal Onslow County. In March of that year, an expedition by 200 soldiers and 45 sailors from the USS *Britannia* and several smaller vessels was repulsed by Confederate fire at Swansboro while a smaller raid at Bear Creek resulted in the destruction of a schooner and the capture of a large number of slaves.

During early summer 1864, a joint Union army and navy expedition attempted to disrupt operations of the Wilmington and Weldon Railroad [W&WR]. Weldon was one of the chief railroad centers in the state and a vital military connection. On 20 June, the steamers USS *Calypso* and USS *Nansemond* departed from Beaufort and landed detachments from the Ninth Vermont Volunteers near New River to meet and cooperate with an inland army force (TNHS 1987 I, 10:169). Approximately 100 men were carried aboard four surfboats up the river near Swan Point, where they disembarked under the cover of darkness. Under the command of Captain Kelley, the "Volunteers" took possession of Snead's Ferry and captured a number of the Confederate pickets (TNHS 1987 I, 10:170-171). However, on the following day, boats resupplying the detachment came under Confederate fire from Swan Point. Fearing that the point had been fortified with artillery Kelley's unit was evacuated. Unbeknownst to Union strategists, Confederate forces had received intelligence regarding the proposed sortie and had fortified the railroad. After being apprised of the armed guards, the Federals abandoned the attack, recalling the two steamers back to Beaufort via Bogue Inlet (TNHS 1987 I, 10:169).

Though Onslow County was not a major blockade running center during the war, a number of vessels sought refuge along the coast to escape capture. The Union navy realized the potential for clandestine trade along that corridor and

often inspected the lower sounds of North Carolina. On 16 December 1863, a schooner was observed at the entrance of Bear Inlet by the USS *Mount Vernon* and the USS *New Berne*. The *Mount Vernon* anchored at the center of Bear Inlet and lowered boats for boarding the vessel. Acting Master E. W. White reported that, "... had scuttled and set fire to the G. O. *Bigelow*, her crew having run her aground and abandoned her a few minutes before they got aboard" (TNHS 1987 I, 9:344, 780).

On Christmas Eve, the USS *Daylight* and the USS *Howquah* left Beaufort to confiscate a large supply of salt that had been landed by the G. O. *Bigelow* and a cargo of naval stores that was ready for shipment prior to that vessel's destruction by the *Mount Vernon*. Though no naval stores were found three [four] salt works, 150 sacks of salt and a large number of empty barrels for turpentine were destroyed by the expedition (TNHS 1987 I, 9:375-376).

In February 1864, the 750-ton *Nutfield* was stranded and burned at New River Inlet while running the blockade. Although the precise location of the shipwreck was not identified, an 1882 U.S. Army Corps of Engineers (USACE) report mentioned "the wreck of an old blockade runner" on the "eastern side of the inlet" (Anglely 1982:4). In June of that year, another blockade runner, the *Pevensey*, was chased ashore on Bogue Banks while enroute to Wilmington.

Onslow County, like many other areas in the south, was slow to recover from the economic and social impacts of the war. One response to the economic collapse that followed the war manifested itself through numerous public meetings. These gatherings were organized in Jacksonville to identify improvements that would encourage commerce along New River. As early as 1869, plans were formulated to secure a steamboat that would operate between Jacksonville and Wilmington. Proponents suggested that the vessel would be built in Delaware and commanded by Captain John N. Maffit, the celebrated Confederate naval officer from Wilmington, North Carolina (*Morning Star* [MS] 11 June 1869).

Unfortunately for residents and commercial interests in Onslow County, that maritime venture did not materialize. A lack of navigable channels may have been one chief obstacle. In 1875, a federal civil engineer reported about impediments to navigation in southeastern North Carolina that included the New River Inlet area. S. T. Albert noted that:

Between Bogue Sound and Wilmington are five shallow sounds, with an occasional inlet, where coasters may find haven. These sounds...are for the most part occupied by an intricate network of channels through which a canoe cannot pass. The storms sweep into the sounds a large amount of sand which the feeble backwater is unable to remove, and large deltas have been formed by the ocean inside the inlets...Local testimony seems to indicate that the beach is washing away between New River and Masonborough, and some residents affirm that the beach has retreated as much as one-eighth of a mile in the last twenty years (Anglely 1984:7).

Circa 1882, only seven schooners reportedly traded between markets at New River and Wilmington. Those coastwise vessels carried annual cargoes that totaled 20,000 barrels of naval stores and 1,500 bales of cotton plus shipments of peanuts, oysters, and fish. During the following year, a steamer commenced service between New River and nearby Morehead City (Anglely 1982:4). At the same time, Onslow County's economic growth was also being fostered by an overall expansion of seafood industries. Trout and mullet were caught locally in great numbers and quickly developed into an important export commodity (MS 20 January 1878). Like the region's trout and mullet, New River oysters became popular as far away as New York and were exhibited in Boston during the Boston Exposition in 1883 (*Weekly Star* [WS] 28 September 1883). The New River Oyster Company was formed in 1890 to continue to foster development of the oyster industry in Onslow County (WS 21 November 1890).

The General Assembly incorporated the Eastern Carolina Piscatorial Association to promote the region's coastal resources during that same year (Watson 1995:90; WS 2 September 1892). Residents of Jacksonville and Onslow County also began to express considerable interest in agricultural development. Cotton rapidly became the county's principal crop, but as the sandy soils became depleted by the turn of the twentieth century area farmers switched to tobacco. A series of popular local agricultural societies were organized to promote development of the cash crop. The Onslow County Agricultural Society was formed for that purpose in Jacksonville during September 1872.

Formation of the agricultural and piscatorial societies corresponded with the arrival of the Wilmington, Onslow and East Carolina Railroad in December 1890. The railroad brought an influx of people into Jacksonville and more than 50 houses and a variety of new stores were reported under construction the following year (WS 9 January 1891). The railroad also provided long sought steamboat services for Jacksonville. The Onslow County Railroad Company initiated operations with the steamboat *Louise* in 1890 and placed the *George D. Purdy* in service in June 1894 (*Daily Review* 26 March 1890). The *George D. Purdy* was later purchased and operated by the East Carolina Piscatorial Association (WS 17 September 1897). Due to the popularity of local steamship and rail services, schooners all but disappeared by 1905 (Anglely 1982:4).

Rail and steamer connections contributed to a revival of the lumber industry in the 1890s and a variety of mills were constructed in and around Jacksonville. The Onslow Lumber Company of Jacksonville made its first shipment of wood to Wilmington in August 1891 (WS 6 August 1891). In 1912, two additional mills were built near Jacksonville (MS 27 September 1912, 20 July 1919). Two years later a fourth mill had been established and Jacksonville mills were turning out several thousand dollars worth of cut lumber each week (MS 27 January 1914). While most of the lumber produced in Jacksonville was shipped to Atlantic coast ports for sale, a small amount was used to support local shipbuilding.

The naval stores industry, on the other hand, experienced a sharp decline during post war years. The volume of production dropped dramatically from a value of nearly \$400,000 just before the war to \$38,700 in 1870 (Watson 1995:89). This

decline in production lowered Onslow County's rank from fourth to eleventh in the state. Though the number of distilleries doubled between 1870 and 1880 production remained low and by the second decade of the twentieth century, the industry had all but disappeared.

An 1882 federal navigation report described the dynamic condition of New River Inlet during the last quarter of the nineteenth century. Engineer John P. Darling stated:

The bar outside the inlet is constantly changing, the sand drifting during heavy winds. At the time of the examination the channel was on the west side of the breakers in front of the inlet, but was changing to the east near the wreck of an old blockade runner where the channel used to be a few years ago, as I am informed.... The inlet from the shore on the west to the long sand bar or beach on the east is 500 feet in width.... There is about 5 feet of water on the bar at ordinary low-tides.... Five of water can be carried from the inlet to the lower end of the oyster rocks, 7,000 feet, the same depth prevails in the channel, but it is only 50 feet in width, and very crooked, it having been cut so (I [Darling] think by the state) to avoid the worst rocks, they being visible on both sides at low water (Angleley 1982:5).

As a consequence of Darling's findings, the USACE implemented a dredging project in 1886 when a cut was made through Cedar Bush Marsh and through Wright's Island. The first cut quickly deteriorated and was abandoned in 1894, but more work continued on the lower part of what is now call Western Channel to secure a four-foot deep channel. By 1905, an oyster shell dike was constructed at Western Channel and that construction helped to secure and maintain the 4-foot depth at low water (Angleley 1982:5). Prior to 1900, dredges also extended a navigable channel [Swansboro to Beaufort] that had been constructed in 1880 to a point beyond the lower New River shoals (WS 21 November 1890).

New River boat building continued as a modest industry during the early decades of the twentieth century. The majority of that production focused on small vessels. By the turn of the century, gasoline began to replace steam powered vessels and construction turned away from commercial to fishing and pleasure craft. Local shipyards were located near Sneads Ferry and Marines on the New River. New River builders were known for a long-bowed skiff, specifically small boats rigged like skipjacks (Watson 1995:118). Despite the existence of New River shipyards, a 1916 report indicated that "no commerce whatever passed through the inlet [New River] to the sea" (Angleley 1982:4).

Navigational improvements made during the twentieth century brought many changes to Onslow County. During the 1920s, construction began on the Intracoastal Waterway, a protected waterway traversing the entire eastern seaboard of the United States. It was hoped that the waterway would facilitate coastal trade and open areas of the coast that had little access to transportation outlets. Prior to 1930, Beaufort remained the southern terminus of the Intracoastal Waterway. To the south of that North Carolina port, the waterway resumed at Winyah Bay, South Carolina. Federal legislation enacted during the

late 1920s approved construction of a 93-mile long waterway between the port cities of Beaufort and Wilmington. The projected waterway was expected to increase shipments of "large quantities of lumber, seafood, fertilizer, petroleum products, and general merchandise through the intervening sounds" (Anglely 1984:8). The segment that eventually passed through Onslow County was 12-foot deep and 90 feet wide. In 1938, six years after being completed, approximately 8,500 motor vessels, 200 barges and 300 tugs were crossing Onslow's waters within the Intracoastal Waterway (Anglely 1984:8; Watson 1995:117).

Overall, Onslow County was still rural in nature and did not contain any significantly populated towns until the 1950s. The economy was based on the same industries as the previous century, agriculture, lumbering and fishing. The naval stores industry had all but disappeared by World War I. Small farms dedicated to tobacco production dominated the countryside. Other important commodities included corn, cotton, sweet potatoes, peanuts, peas, hay, apples and peaches (Watson 1995:112). During Reconstruction, tenancy became the principal method of farming. By 1940, 41 per cent of Onslow County's farms still operated by that method (LBG 2002:13). The seafood industry remained steady. Prior to World War II, there were some 25 trawlers in the county and many were locally constructed (Still 1983).

The county's transportation networks were expanded and modernized during this period. Though water remained the principal method of transportation a number of new and paved roads began to appear in the county, spurred by the introduction of the automobile. In 1924, Route 17 crossed through the county following the old Colonial Post Road and in 1934, Route 24 was completed. The railroads also expanded during this period. However, most catered to the lumber industry and were short in length, transporting timber directly to the mills for processing. Many of the lines could not compete against the expanding road system and were eventually discontinued.

Onslow County underwent a protracted economic decline at the close of World War I. Farm prices collapsed with the recovery of Europe and the removal of stimulus packages to aid the war effort. As a result, when the stock market crashed and the Great Depression came their overall impact was minimal. In 1933, the North Carolina Emergency Relief Administration provided Onslow County with some relief in the form of public works and farm relief. The Work Projects Administration [WPA] also assisted to provide local employment opportunities. One WPA project sponsored the construction of a Community Club House on the waterfront in Jacksonville.

Economic conditions improved slowly until World War II when the area was selected as the site for Camp Lejeune, the largest marine training facility in the United States. The New River site was selected by the military for its location, isolation and geography. Though the federal government made patriotic appeals for residents to sell their land, most refused and their land was acquired by condemnation. As a consequence, approximately 720 families were left homeless and destitute (Watson 1995:135). The U.S. military eventually received title to



173.8 square miles of land fronting both sides of New River (Littleton 1981:169). This acreage would expand to over 246 square miles with the addition of New River Marine Corps Air Station, Camp Geiger and other support facilities.

During World War II, at least 12 American tankers and freighters were sunk in Onslow Bay as a consequence of being torpedoed by German U-boats. The majority of those commercial vessels were lost during March and April 1942. Conversely, the 218-foot *U-352* was destroyed in the bay after being depth-charged by the USCG cutter *Icarus* (Gentile 1992:193-209; Survivor Topsail 2005). After the global conflict ended, the establishment of the Marine Corps base at nearby Jacksonville began to stimulate commercial development in Jacksonville and Onslow County.

Because of the proximity of the marine base, the City of Jacksonville has developed into the largest commercial center in Onslow County. The area is home to active duty marines and their dependents, civil service employees, civilian employees and many civilian and military retirees. Expansion of the Camp Lejeune Marine Corps training facility provided unprecedented support for Jacksonville and fostered growth that continues today. By 2001, Jacksonville's population has grown from 3,960 in the 1950s to more than 70,000 (Murrell and Murrell 2001:73).

The nature of activities along New River has changed due to improved inland transportation and other factors. New River boat-building enterprises declined by the mid-twentieth century, but some smaller yards like the Matthews Brothers Nethouse continued operations (LBG 2002:13). Today, private leisure and charter vessels transport "May parties" and "banks parties" up and down the river. According to sociologist John Mailio, a substantial channel-net fishery has also developed in the New River at Snead's Ferry during the last several years. His research on the North Carolina shrimping industry indicated that 50 to 60 vessels operate between New River and Swansboro and between New River and Topsail Beach (Maiolo 2004:41-42).

## Previous Investigations

In May 1978, the fragmentary remains of a vessel (002 NWI) were found on West Onslow Beach. The wreck was reported to the Division of Archives and History by Mr. Keith Worth of Fayetteville. Leslie Bright of the UAU visited the site and examined the wreck with U.S. Marine Corps personnel on 21 May and identified the structure as a section of the hull of a small coasting vessel such as a schooner. The wreckage was located on the beach approximately 1/4 mile north of New River Inlet. Because the structure was considered to be a representative example of nineteenth century vessel construction, it was removed from the beach and delivered to Fort Fisher by the U.S. Marines (Bright 1978).

In August 1978, the remains of another small vessel (001 NWI) were reported to the UAU by Max Hill of High Point, North Carolina. Ballast, cultural material and wood fragments had been observed at the site as early as 1970 by Paul Miller



of Milton, Wisconsin (Paul Miller to Richard Lawrence, personal communication 27 September 1994,). A one-day reconnaissance of the wreck site was conducted by Gordon Watts, Richard Lawrence, Dina Hill and several other members of the Fort Fisher staff on 18 August 1978. The wreck was located on the south side of the channel directly across from a black can buoy. Examination of the exposed remains indicated that the surviving structure was associated with a small nineteenth century vessel. Only a small fragment of deck structure approximately 3 feet in width and 12 feet in length was documented. The fragment included 2- and 3-inch-thick planks, beams, a hanging knee and possibly a fragment of a breast hook. The area around the section of deck was littered with ballast stones, shingle and scattered fragments of glass and ceramic material that suggested an antebellum date (UAU n.d.).

001 NWI was reexamined in August 1982 by Mark Wilde-Ramsing and Dina Hill of the UAU. Wilde-Ramsing and Hill confirmed that the site was the same as previously examined in 1978 and that there was a ballast scatter and exposed vessel structure located on the south side of the channel directly across from a black can buoy. A site sketch placed the hull remains immediately west of a grove of live oaks. The exposed hull remains measured approximately 75 feet in length and 17 feet in beam (Wilde-Ramsing 1982). Although rising tide prevented a detailed examination, Wilde-Ramsing concluded the structure consisted of the lower hull of a small sailing vessel (Wilde-Ramsing 1982).

In 1982, a second wreck (003 NWI) was documented in the immediate vicinity of New River Inlet. The vessel was investigated by the staff and students of East Carolina University's Program in Maritime History and Underwater Research (*Daily News*, 20 August 1982). Responding to a report of the exposed wreck provided by Swansboro historian Tucker Littleton, a two-day reconnaissance of the wreck site was carried on 18 and 19 August 1982. Examination of the exposed remains confirmed that the vessel was a small late nineteenth century schooner. Little of the hull above the turn of the bilge survived and the bilge was filled with ballast stones and scattered with fragments of glass and ceramic material. The keel measured 56 feet and the maximum surviving beam measured 18 feet.

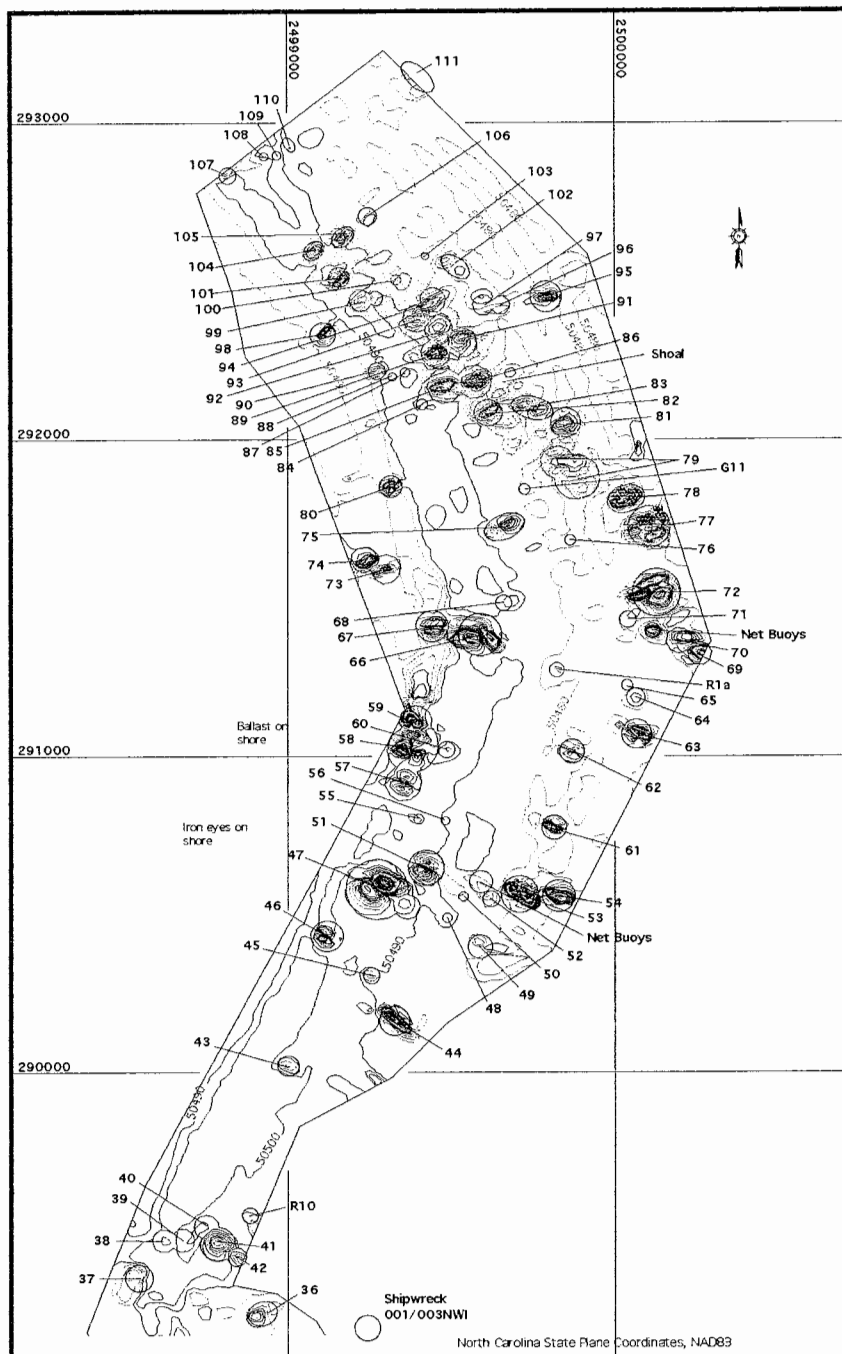
A remote sensing survey of the ocean front along West Onslow Beach was carried out in 1997 by personnel from UAU and the Institute for International Maritime Research. The survey was designed to locate the remains of the Civil War blockade runner *Nutfield*. That British steamer was reported to have stranded and been destroyed in the immediate vicinity of New River Inlet in February 1864. The survey covered the inshore area between the shoals north of New River Inlet and the West Onslow Beach pier. No evidence of the *Nutfield* were identified during the investigation (Watts, personal communication 2005).

## Description of Findings

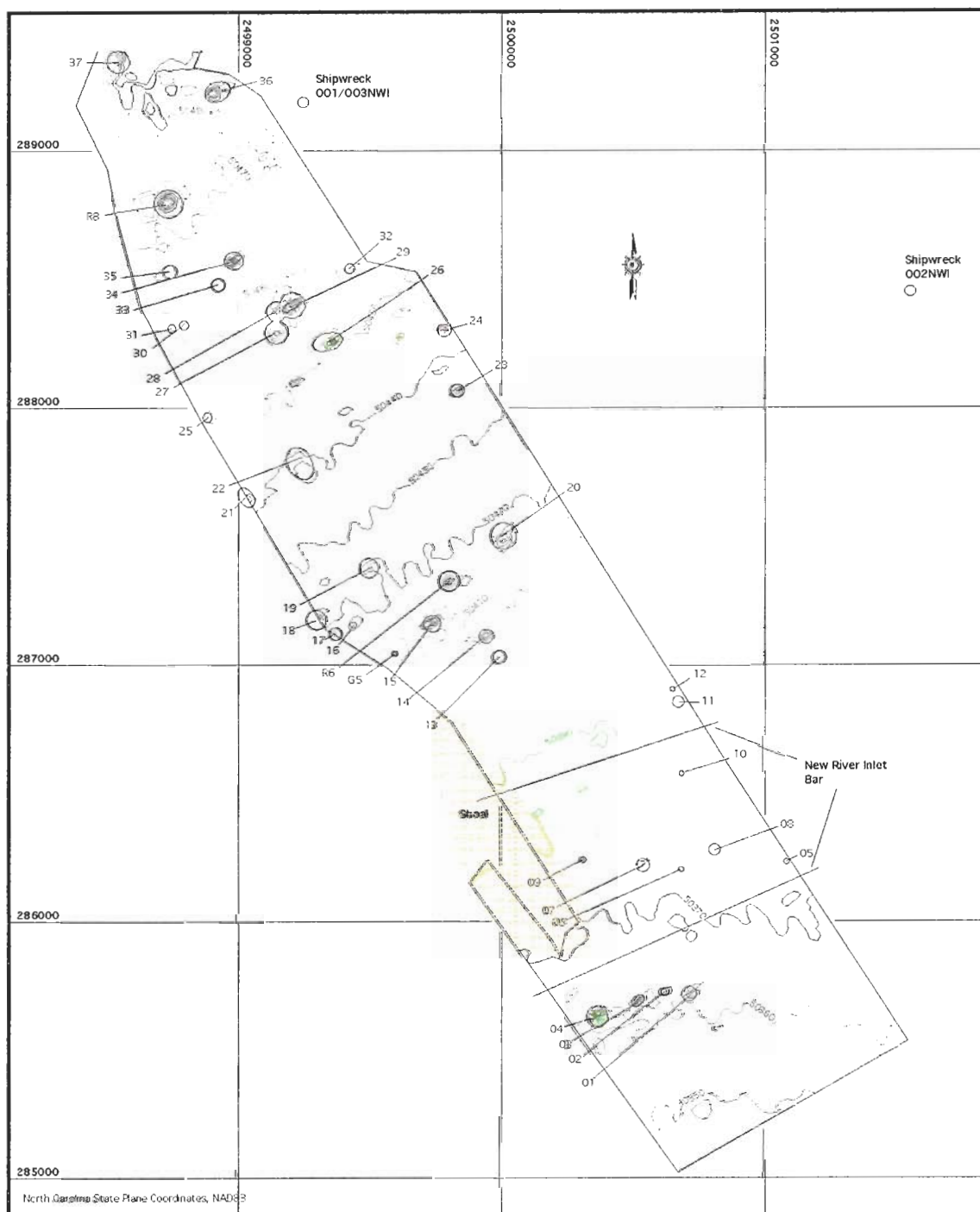
The remote sensing survey of New River Inlet identified a total of 111 magnetic and/or acoustic anomalies (Appendix B, Table 1; Figure 5, 6). Analysis of the data indicates that 29 of those targets (NRI-07, 08, 10, 20, 21, 22, 25, 27, 28, 29, 35, 36, 38, 39, 40, 41, 42, 46, 47, 51, 57, 58, 59, 60, 62, 66, 67, 69 and 70) have a moderate to high potential association with shipwreck material and/or other submerged cultural resources. Fourteen of the 29 comprise four discrete clusters: Cluster 1 (NRI-27, 28 and 29), Cluster 2 (NRI-38, 39, 40, 41 and 42), Cluster 3 (NRI-57, 58, 59 and 60) and Cluster 4 (NRI-66 and 67). Cluster 1 lies near the documented location of shipwreck site 001/003NWI, a small late nineteenth century vessel. Cluster 2 is located near an area of exposed iron eye fasteners on the western bank of New River and Clusters 3 and 4 are near an area of exposed ballast rock on the western bank of the river. Unless those targets can be avoided additional investigation to identify and assess the material generating each of the signatures is recommended.

Fifteen additional targets (NRI-77, 79, 81, 82, 83, 85, 86, 91, 92, 93, 97, 99, 100, 102 and 111) were also found to contain signature characteristics consistent with shipwreck material and/or other potentially significant submerged cultural resources (Appendix B, Table 1). These targets also lie on a sandbar in extremely shallow water in the northern end of the survey area. While they are likely to represent debris associated with modern navigation in the inlet, a representative sample of three of the targets should be investigated to determine whether they are historically significant. Should they proved to be significant cultural resources then the remaining 12 anomalies should be identified and assessed.

The remaining 82 targets appear to have been generated by single and/or clusters of ferrous objects such as small diameter iron rods, chain, cable, pipes, small boat anchors, traps or other modern debris (Appendix B, Table 1). No additional investigation of those sites is recommended in conjunction with the proposed project. Water depth within the survey area ranged between 0 and 12 feet.



**Figure 5. Magnetic contour map, New River Inlet – north section.**



**Figure 6. Magnetic contour map, New River Inlet—south section.**

## High Priority

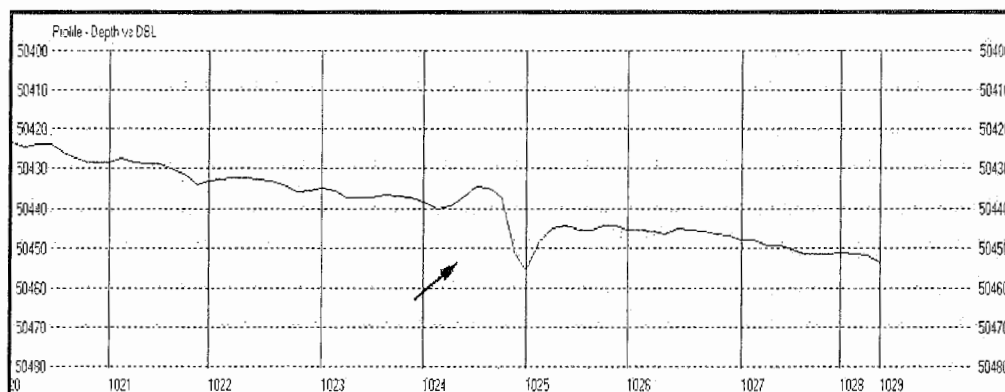


Figure 7. Magnetic target NRI-21.

Target Designation	Easting	Northing	Gammas	Duration
NRI-21	2499031.7	287663.6	21	97

Target NRI-21 was located on lane 1 on the edge of the survey area. The detectable signature had a maximum intensity of 21 gammas and a maximum duration of 8 seconds over a distance of 97 feet (Figure 7). The contoured signature covered an area of at least 2,200 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-21 were developed from the following lane specific data:

1c-d21g8s97f	2499031.7	287663.6
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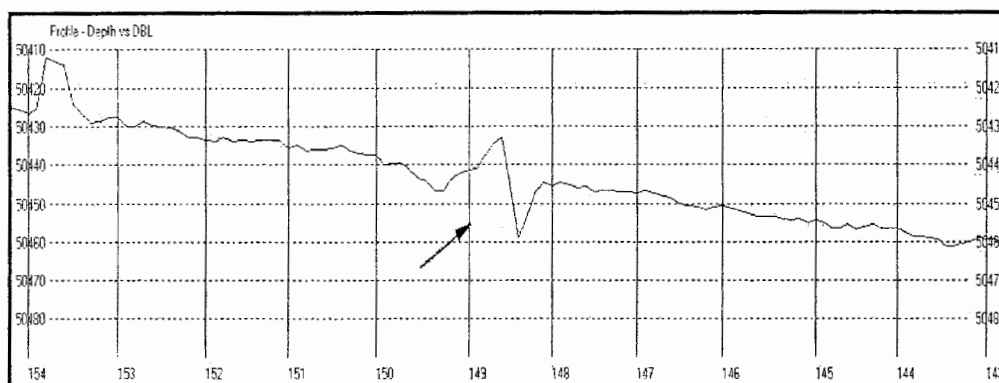


Figure 8. Magnetic target NRI-22.

Target Designation	Easting	Northing	Gammas	Duration
NRI-22	2499240.3	287810.3	26	164

Target NRI-22 was located on lane 6. The detectable signature had a maximum intensity of 26 gammas and a maximum duration of 16 seconds over a distance of 164 feet (Figure 8). The contoured signature covered an area of approximately 12,100 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-22 were developed from the following lane specific data:

6e-d26g16s164f      2499240.3      287810.3

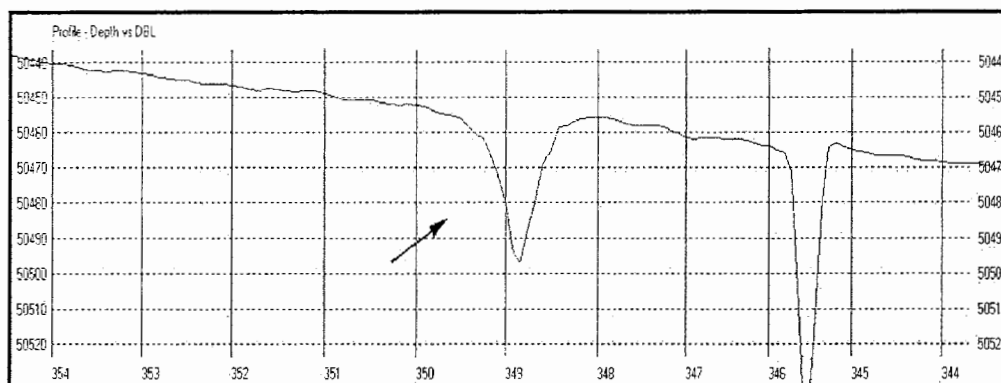


Figure 9. Magnetic target NRI-27.

Target Designation	Easting	Northing	Gammas	Duration
NRI-27	2499149.1	288299.0	39	109

Target NRI-27 was located on lane 10. The detectable signature had a maximum intensity of 39 gammas and a maximum duration of 13 seconds over a distance of 109 feet (Figure 9). The contoured signature covered an area of approximately 7,400 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. The target also appears to be spatially associated with NRI-28 and 29. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-27 were developed from the following lane specific data:

10b-p39g13s109f	2499149.1	288299.0
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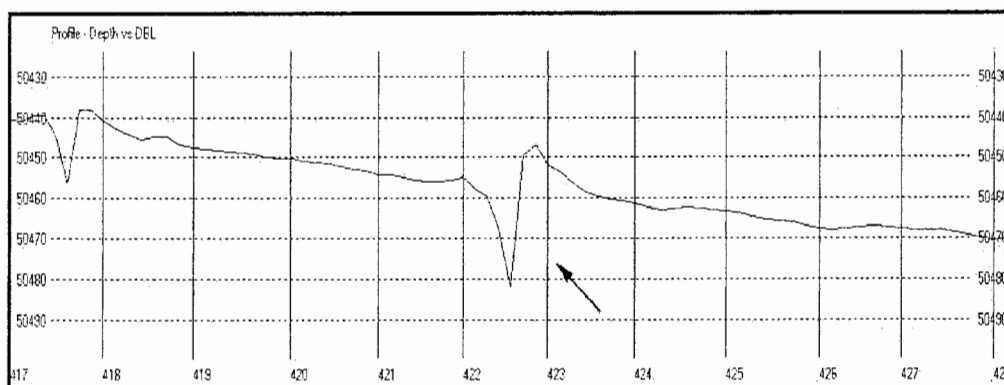


Figure 10. Magnetic target NRI-28.

Target Designation	Easting	Northing	Gammas	Duration
NRI-28	2499147.6	288382.7	35	152

Target NRI-28 was located on lane 11. The detectable signature had a maximum intensity of 35 gammas and a maximum duration of 11 seconds over a distance of 152 feet (Figure 10). The contoured signature covered an area of approximately 2,600 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. The target also appears to be spatially associated with NRI-27 and 29. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-28 were developed from the following lane specific data:

11h-d35g11s152f	2499147.6	288382.7
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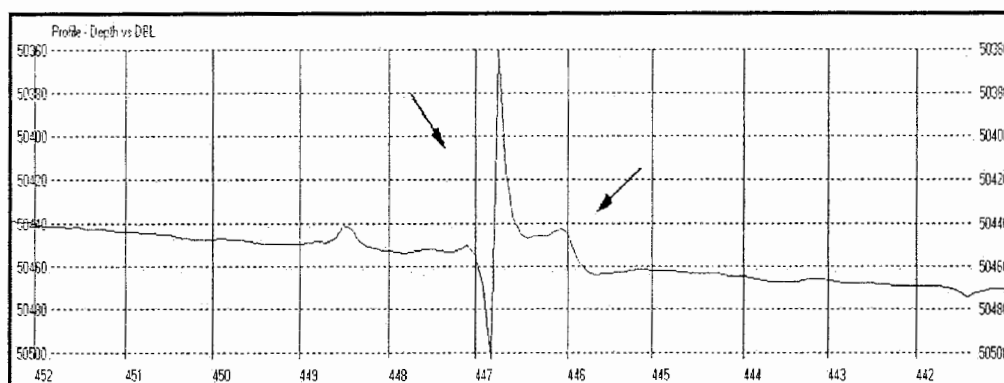


Figure 11. Magnetic target NRI-29.

Target Designation	Easting	Northing	Gammas	Duration
NRI-29	2499204.0	288398.0	142	139

Target NRI-29 was located on lanes 12 and 13. The detectable signature had a maximum intensity of 142 gammas and a maximum duration of 17 seconds over a distance of 139 feet (Figure 11). The contoured signature covered an area of approximately 5,700 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object or cluster of objects of moderate ferrous mass such as ordnance, small diameter pipe, wire rope, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. The target also appears to be spatially associated with NRI-27 and 28. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-29 were developed from the following lane specific data:

12b-m142g17s139f	2499204.5	288407.8
13b-n12g8s119f	2499249.9	288419.3

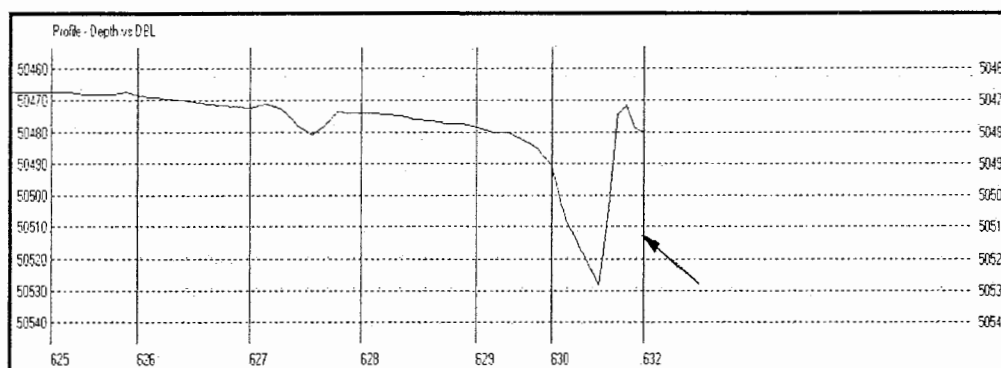


Figure 12. Magnetic target NRI-36.

Target Designation	Easting	Northing	Gammas	Duration
NRI-36	2498934.0	289238.0	57	154

Target NRI-36 was located on lanes 15 and 16. The detectable signature had a maximum intensity of 57 gammas and a maximum duration of 22 seconds over a distance of 154 feet (Figure 12). The contoured signature covered an area of approximately 6,300 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object or cluster of objects of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. The target is located near the position of a previously documented wreck, 001/003 NWI. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-36 were developed from the following lane specific data:

15b-d57g10s125f	2498899.9	289229.9
16a-d21g22s154f	2498954.1	289251.4

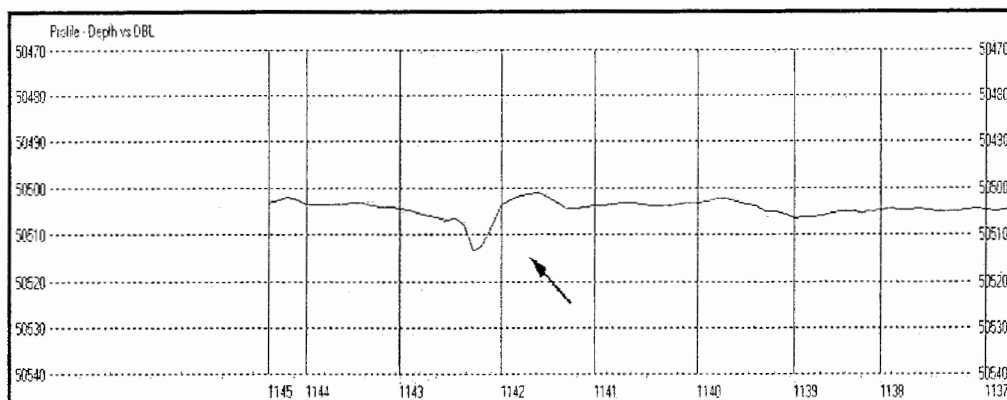


Figure 13. Magnetic target NRI-38.

Target Designation	Easting	Northing	Gammas	Duration
NRI-38	2498618.9	289468.8	12	47

Target NRI-38 was located on lane 8. The detectable signature had a maximum intensity of 12 gammas and a maximum duration of 5 seconds over a distance of 47 feet (Figure 13). The contoured signature covered an area of approximately 800 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. The target appears to be spatially associated with NRI-39, 40, 41 and 42 and is located near the position of a previously documented wreck, 001/003 NWI. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-38 were developed from the following lane specific data:

8n-p12g5s47f	2498618.9	289468.8
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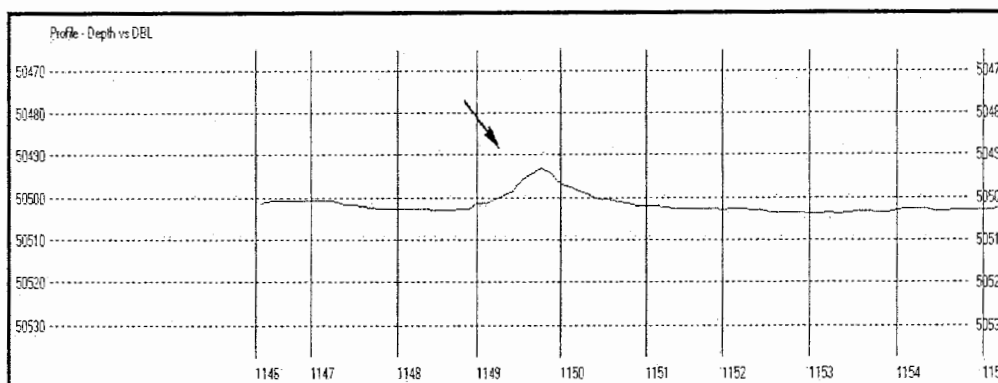


Figure 14. Magnetic target NRI-39.

Target Designation	Easting	Northing	Gammas	Duration
NRI-39	2498678.5	289469.5	9	190

Target NRI-39 was located on lane 9. The detectable signature had a maximum intensity of 9 gammas and a maximum duration of 17 seconds over a distance of 190 feet (Figure 14). The contoured signature covered an area of approximately 2,000 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. The target appears to be spatially associated with NRI-38, 40, 41 and 42 and is located near the position of a previously documented wreck, 001/003 NWI. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-39 were developed from the following lane specific data:

9c-n9g17s190f	2498678.5	289469.5
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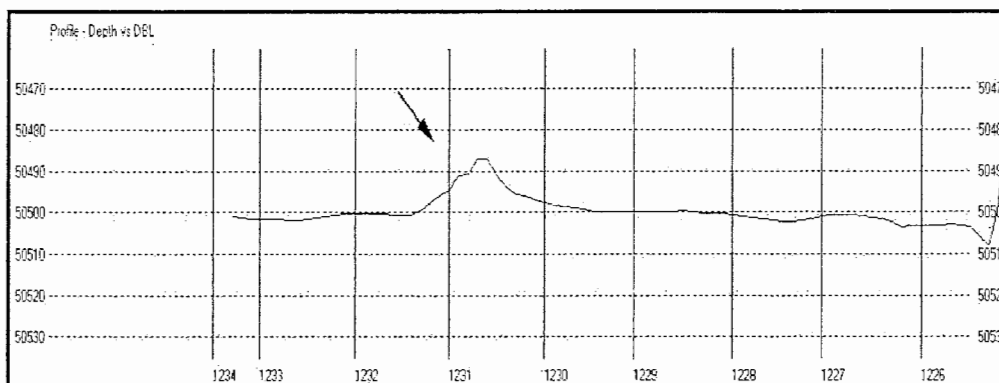


Figure 15. Magnetic target NRI-40.

Target Designation	Easting	Northing	Gammas	Duration
NRI-40	2498750.9	289514.2	14	196

Target NRI-40 was located on lane 10. The detectable signature had a maximum intensity of 14 gammas and a maximum duration of 20 seconds over a distance of 196 feet (Figure 15). The contoured signature covered an area of approximately 1,200 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. The target appears to be spatially associated with NRI-38, 39, 41 and 42 and is located near the position of a previously documented wreck, 001/003 NWI. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-40 were developed from the following lane specific data:

10n-n14g20s196f	2498750.9	289514.2
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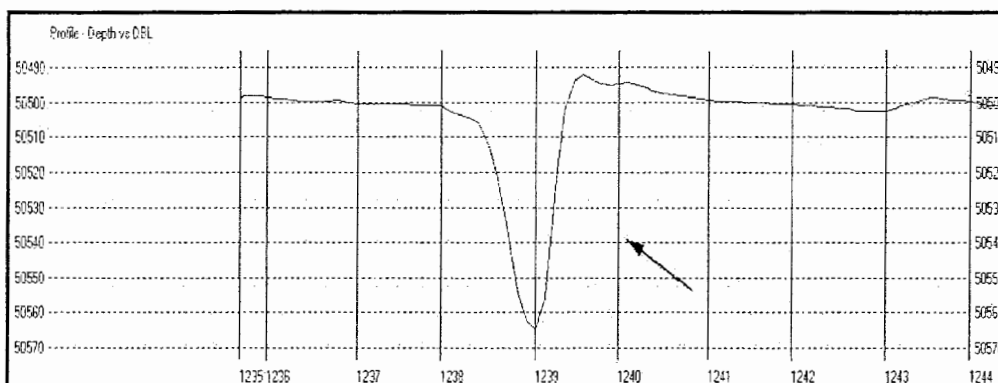


Figure 16. Magnetic target NRI-41.

Target Designation	Easting	Northing	Gammas	Duration
NRI-41	2498780.4	289467.9	73	285

Target NRI-41 was located on lane 11. The detectable signature had a maximum intensity of 73 gammas and a maximum duration of 27 seconds over a distance of 285 feet (Figure 16). The contoured signature covered an area of approximately 7,700 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. The target appears to be spatially associated with NRI-38, 39, 40 and 42 and is located near the position of a previously documented wreck, 001/003 NWI. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-41 were developed from the following lane specific data:

11i-d73g27s285f	2498780.4	289467.9
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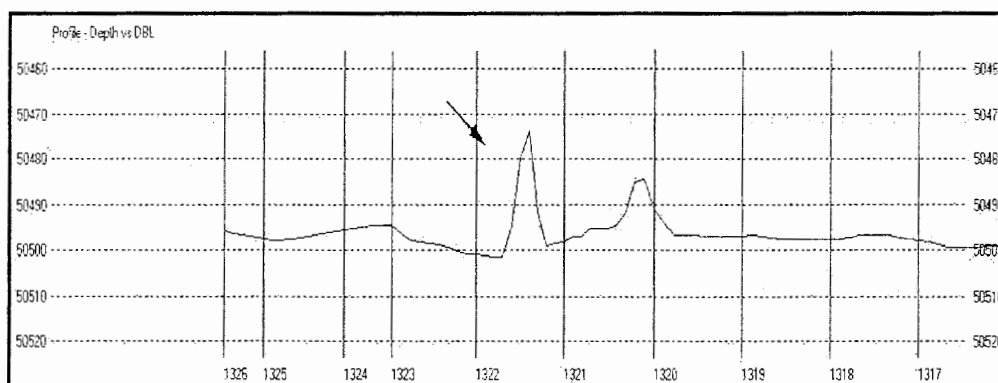


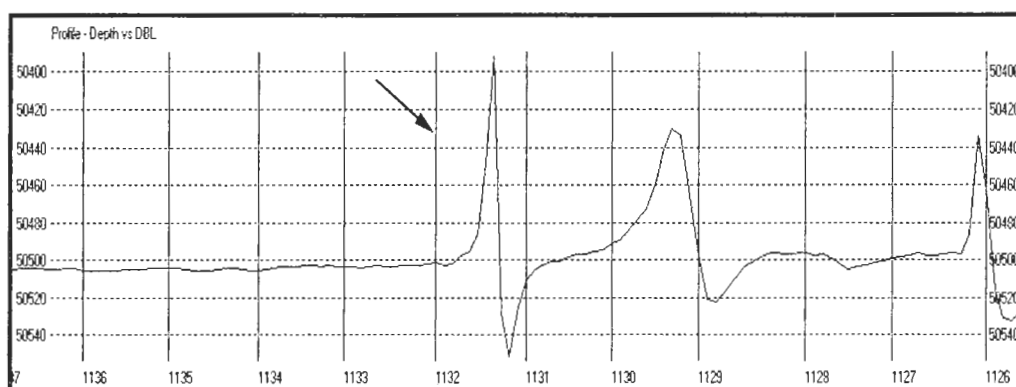
Figure 17. Magnetic target NRI-42.

Target Designation	Easting	Northing	Gammas	Duration
NRI-42	2498833.3	289423.9	28	48

Target NRI-42 was located on lane 12. The detectable signature had a maximum intensity of 28 gammas and a maximum duration of 5 seconds over a distance of 48 feet (Figure 17). The contoured signature covered an area of approximately 3,300 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. The target appears to be spatially associated with NRI-38, 39, 40 and 41 and is located near the position of a previously documented wreck, 001/003 NWI. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-42 were developed from the following lane specific data:

12x-n28g5s48f	2498833.3	289423.9
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**Figure 18. Magnetic target NRI-46.**

Target Designation	Easting	Northing	Gammas	Duration
NRI-46	2499116.0	280432.0	160	109

Target NRI-46 was located on lanes 8 and 9. The detectable signature had a maximum intensity of 160 gammas and a maximum duration of 12 seconds over a distance of 109 feet (Figure 18). The contoured signature covered an area of approximately 5,700 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object or cluster of objects of moderate ferrous mass such as ordnance, wire rope, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Iron eye fasteners and rope were observed exposed on the adjacent shoreline (Figure 19). Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-46 were developed from the following lane specific data:

8m-d160g12s109f	2499097.1	290440.4
9d-n9g9s108f	2499155.5	290429.0



**Figure 19. Iron eye fasteners and rope exposed on west bank of river.**



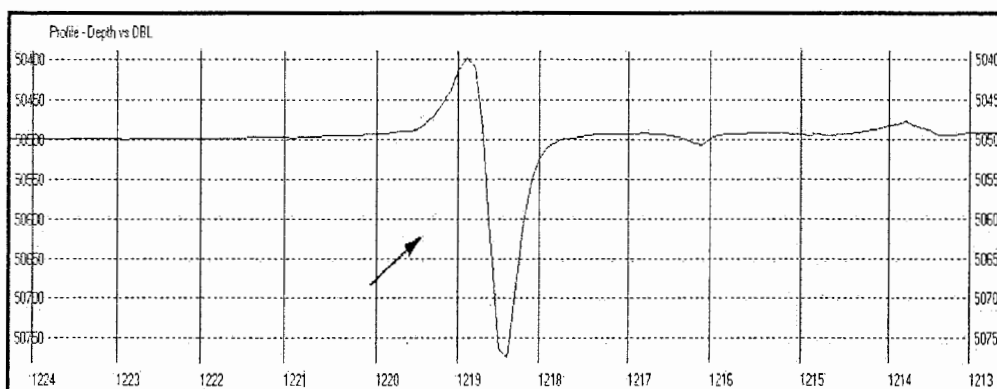


Figure 20. Magnetic target NRI-47.

Target Designation	Easting	Northing	Gammas	Duration
NRI-47	2499275.0	290578.0	376	237

Target NRI-47 was located on lanes 8, 9, 10, 11 and 12. The detectable signature had a maximum intensity of 376 gammas and a maximum duration of 20 seconds over a distance of 237 feet (Figure 20). The contoured signature covered an area of approximately 41,000 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object or cluster of objects of moderate ferrous mass such as small diameter pipe, wire rope, small boat anchor, ordnance or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Iron eye fasteners and rope were observed exposed on the adjacent shoreline (Figure 19). Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-47 were developed from the following lane specific data:

8l-d92g16s186f	2499225.2	290598.2
9e-d179g20s237f	2499234.8	290588.6
10l-d376g19s182f	2499272.7	290588.6
11j-p80g9s102f	2499343.7	290592.2
12u-p30g13s139f	2499363.1	290527.1

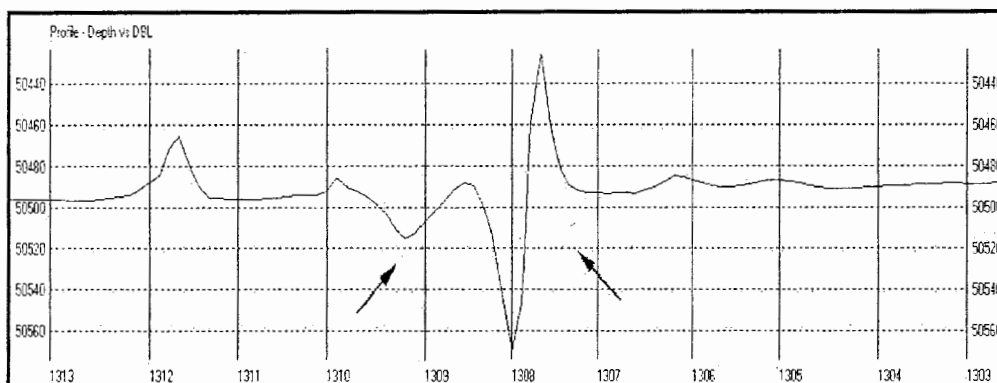


Figure 21. Magnetic target NRI-51.

Target Designation	Easting	Northing	Gammas	Duration
NRI-51	2499422.5	290640.5	144	128

Target NRI-51 was located on lanes 12 and 13. The detectable signature had a maximum intensity of 144 gammas and a maximum duration of 14 seconds over a distance of 128 feet (Figure 21). The contoured signature covered an area of approximately 8,600 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object or cluster of objects of moderate ferrous mass such as small diameter pipe, wire rope, small boat anchor, ordnance or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Iron eye fasteners and rope were observed exposed on the adjacent shoreline (Figure 19). Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-51 were developed from the following lane specific data:

12t-d144g12s128f	2499422.5	290640.5
13k-d29g14s110f	2499455.2	290621.0

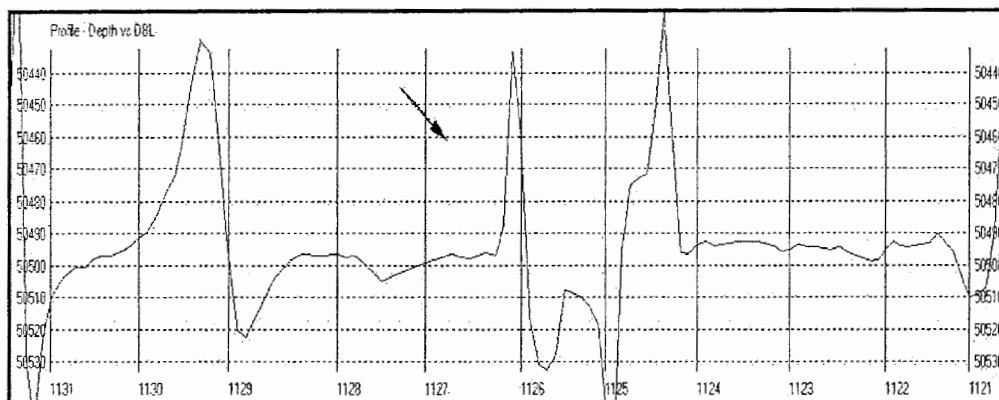


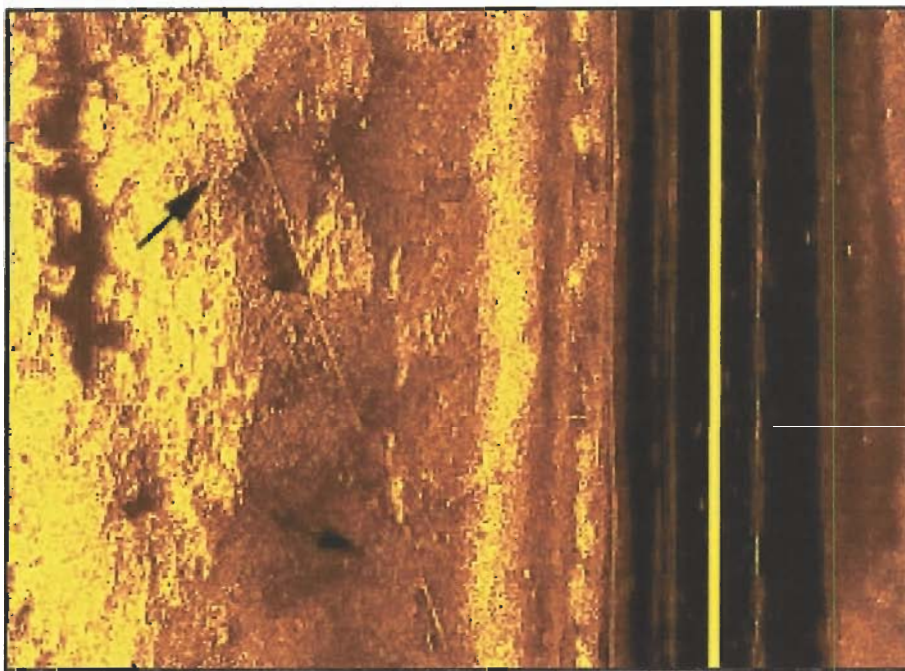
Figure 22. Magnetic target NRI-57.

Target Designation	Easting	Northing	Gammas	Duration
NRI-57	2499353.0	290914.0	99	94

Target NRI-57 was located on lanes 8 and 9. The detectable signature had a maximum intensity of 99 gammas and a maximum duration of 8 seconds over a distance of 94 feet (Figure 22). The contoured signature covered an area of approximately 6,400 square feet. A sonar signature was associated with the material generating the magnetic signature. The sonagram revealed a 98-foot-long length of cable which runs northeast into target NRI-58 (Figure 23). Though the acoustic signature suggests modern debris, material generating the anomaly could also be associated with the remains of a small vessel. A light scatter of ballast stone, possibly from a wreck, lies on the adjacent shoreline (Figure 24). The target also appears to be spatially associated with NRI-58, 59 and 60. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-57 were developed from the following lane specific data:

8k-d99g8s76f	2499356.7	290921.0
9g-d11g8s94f	2499386.7	290894.3
42a	2499370.1	290945.5



**Figure 23.** Acoustic signature NRI-57.



**Figure 24.** Ballast rock exposed on west bank of river.

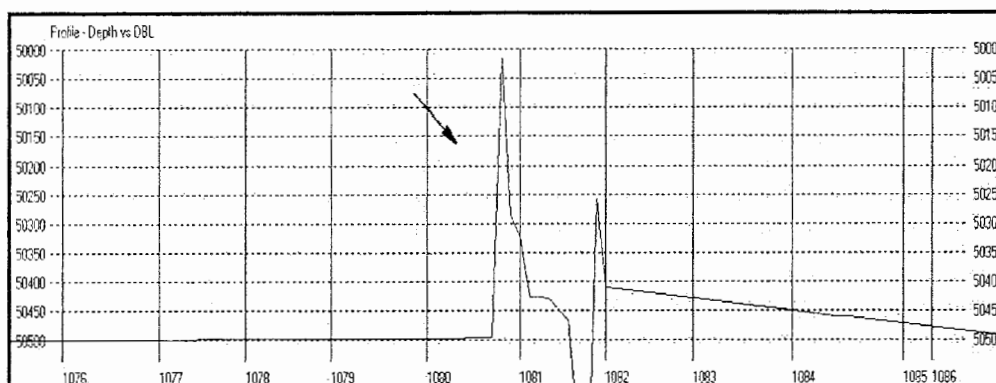


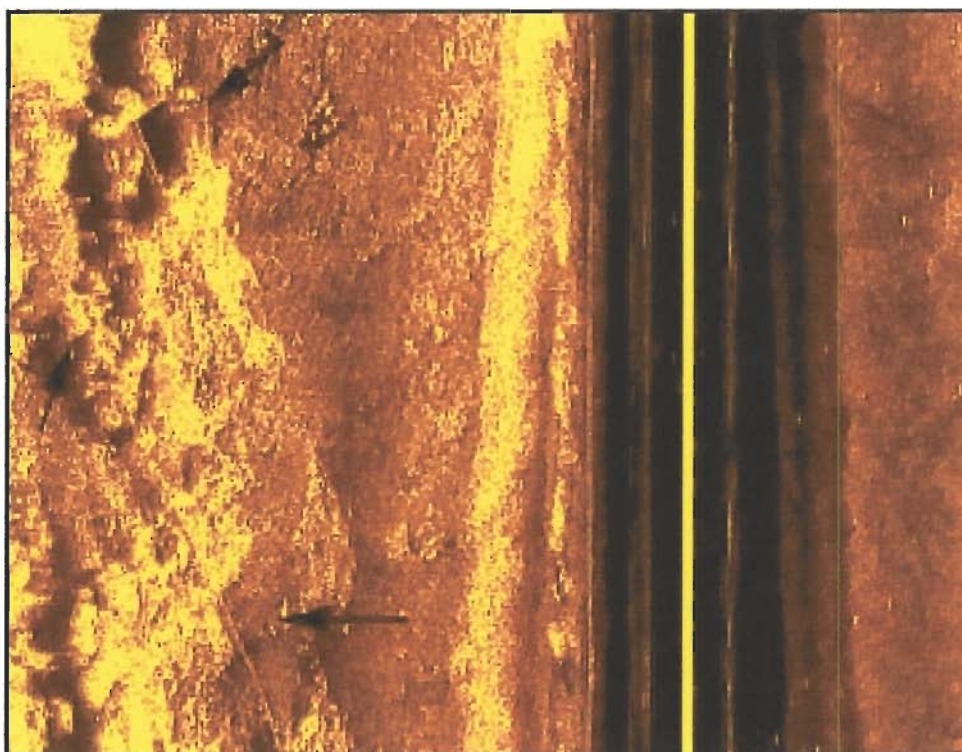
Figure 25. Magnetic target NRI-58.

Target Designation	Easting	Northing	Gammas	Duration
NRI-58	2499366.0	291031.0	481	178

Target NRI-58 was located on lanes 7, 8 and 9. The detectable signature had a maximum intensity of 481 gammas and a maximum duration of 15 seconds over a distance of 178 feet (Figure 25). The contoured signature covered an area of approximately 11,400 square feet. A sonar signature was associated with the material generating the magnetic signature. The sonagram indicated at least two sections of cable: the northern end of the 98-foot-long length noted at target NRI-57 and a smaller, 10-foot-long section (Figure 26). Though the acoustic signature suggests modern debris, material generating the anomaly could also be associated with the remains of a small vessel. A light scatter of ballast stone, possibly from a wreck, lies on the adjacent shoreline (Figure 24). The target also appears to be spatially associated with NRI-57, 59 and 60. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-58 were developed from the following lane specific data:

7g-p481g4s42f	2499346.8	291014.0
8j-m138g12s109f	2499389.0	291029.2
9h-m18g15s178f	2499445.4	291063.0
11	2499338.9	291011.4
12	2499358.5	291036.3
13	2499364.3	290993.9
42b	2499364.1	291006.1
43	2499373.3	291054.7



**Figure 26. Acoustic signature NRI-58.**

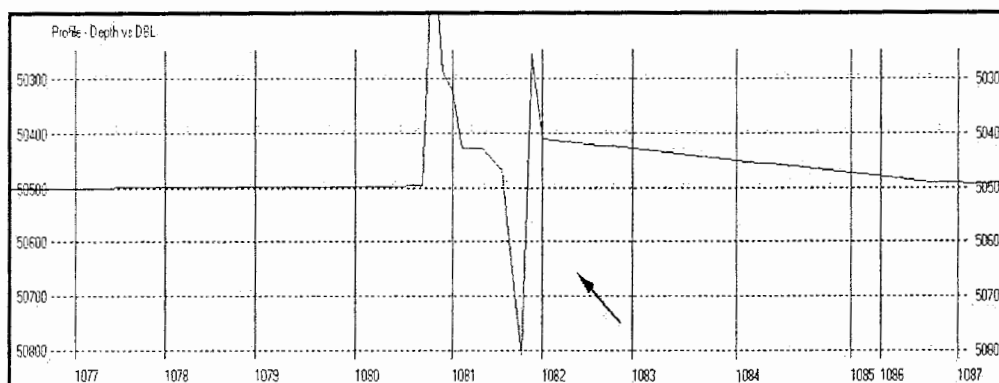


Figure 27. Magnetic target NRI-59.

Target Designation	Easting	Northing	Gammas	Duration
NRI-59	2499356.6	291113.6	554	43

Target NRI-59 was located on lane 7. The detectable signature had a maximum intensity of 554 gammas and a maximum duration of 4 seconds over a distance of 43 feet (Figure 27). The contoured signature covered an area of approximately 3,600 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of high ferrous mass such as pipe, cable or other debris, material generating the anomaly could also be associated with the remains of a small vessel. A light scatter of ballast stone, possibly from a wreck, lies on the adjacent shoreline (Figure 24). The target also appears to be spatially associated with NRI-57, 58 and 60. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-59 were developed from the following lane specific data:

7h-d554g4s43f	2499356.6	291113.6
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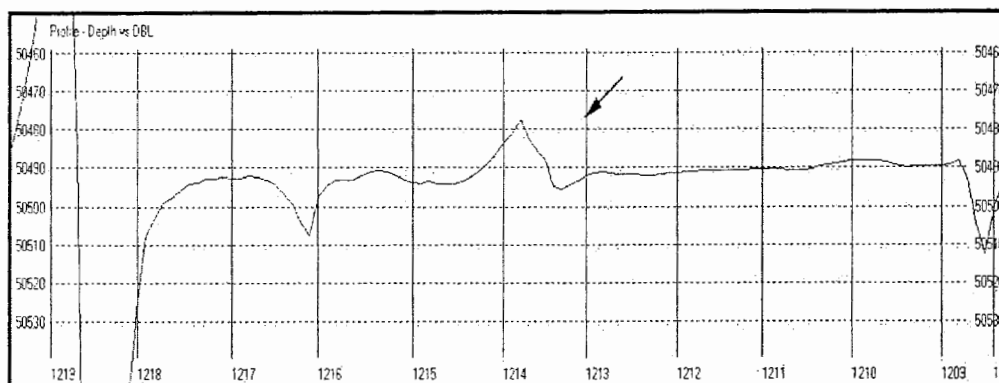


Figure 28. Magnetic target NRI-60.

Target Designation	Easting	Northing	Gammas	Duration
NRI-60	2499486.5	291022.4	18	148

Target NRI-60 was located on lane 10. The detectable signature had a maximum intensity of 18 gammas and a maximum duration of 16 seconds over a distance of 148 feet (Figure 28). The contoured signature covered an area of approximately 3,100 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. A light scatter of ballast stone, possibly from a wreck, lies on the adjacent shoreline (Figure 24). The target also appears to be spatially associated with NRI-57, 58 and 59. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-60 were developed from the following lane specific data:

10j-d18g16s148f	2499486.5	291022.4
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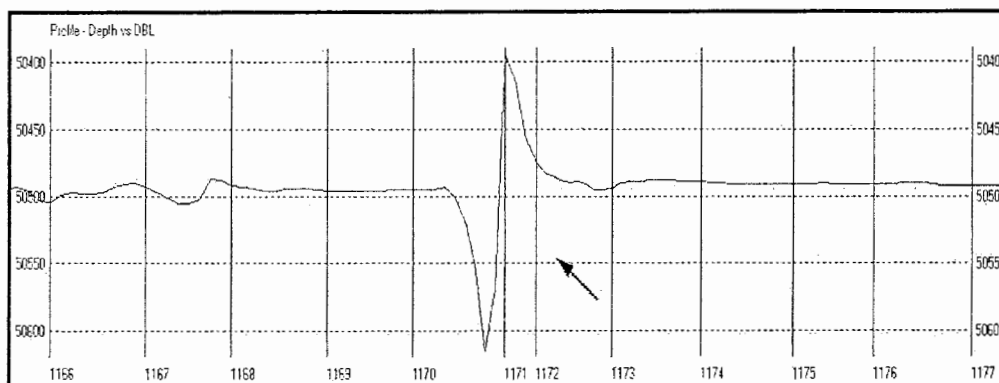


Figure 29. Magnetic target NRI-66.

Target Designation	Easting	Northing	Gammas	Duration
NRI-66	2499591.0	291385.0	222	142

Target NRI-66 was located on lanes 8 and 9. The detectable signature had a maximum intensity of 222 gammas and a maximum duration of 16 seconds over a distance of 142 feet (Figure 29). The contoured signature covered an area of approximately 17,000 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object or cluster of objects of moderate ferrous mass such as ordnance, wire rope, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. A light scatter of ballast stone, possibly from a wreck, lies on the nearby shoreline (Figure 24). The target also appears to be spatially associated with NRI-67. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-66 were developed from the following lane specific data:

8i-d133g16s132f	2499593.0	291394.9
9i-d222g13s142f	2499595.9	291384.0

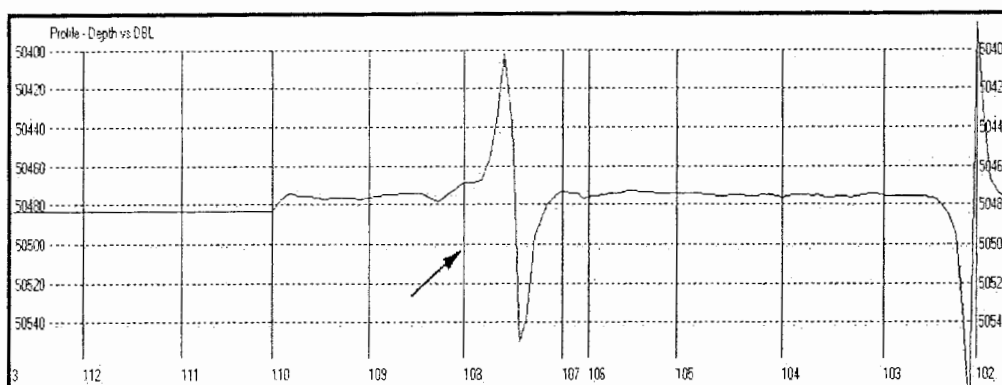


Figure 30. Magnetic target NRI-67.

Target Designation	Easting	Northing	Gammas	Duration
NRI-67	2499467.1	291412.0	148	85

Target NRI-67 was located on lane 6. The detectable signature had a maximum intensity of 148 gammas and a maximum duration of 10 seconds over a distance of 85 feet (Figure 30). The contoured signature covered an area of approximately 6,300 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of moderate ferrous mass such as ordnance, pipe, wire rope, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. A light scatter of ballast stone, possibly from a wreck, lies on the nearby shoreline (Figure 24). The target also appears to be spatially associated with NRI-66. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-67 were developed from the following lane specific data:

6d-d148g10s85f	2499467.1	291412.0
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## Moderate Priority

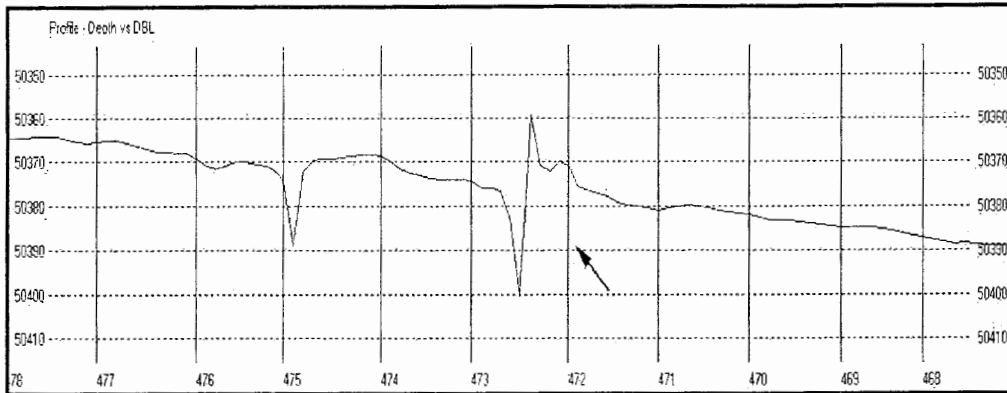


Figure 31. Magnetic target NRI-07.

Target Designation	Easting	Northing	Gammas	Duration
NRI-07	2500543.8	286225.7	41	126

Target NRI-07 was located on lane 7 on the New River Inlet bar. The detectable signature had a maximum intensity of 41 gammas and a maximum duration of 12 seconds over a distance of 126 feet (Figure 31). The contoured signature covered an area of at least 2,900 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small diameter iron rod, chain, small boat anchor, ordnance or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-07 were developed from the following lane specific data:

12f-d41g12s126f	2500543.8	286225.7
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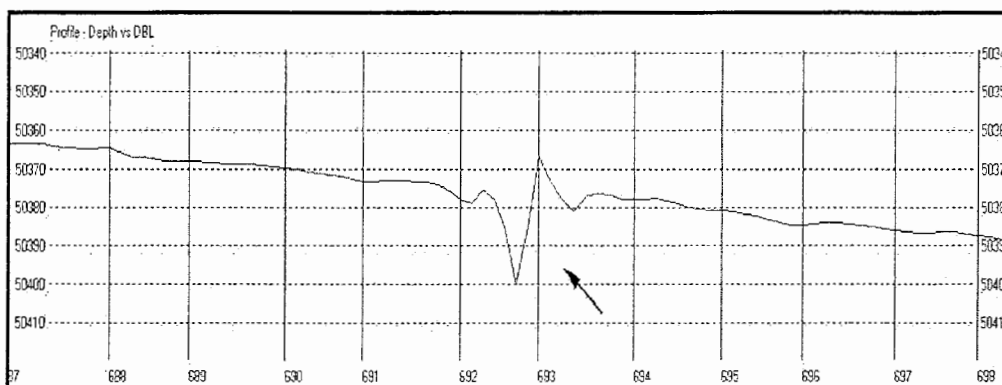


Figure 32. Magnetic target NRI-08.

Target Designation	Easting	Northing	Gammas	Duration
NRI-08	2500803.9	286278.4	34	185

Target NRI-08 was located on lane 17 on the New River Inlet bar. The detectable signature had a maximum intensity of 34 gammas and a maximum duration of 13 seconds over a distance of 185 feet (Figure 32). The contoured signature covered an area of approximately 2,600 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small diameter iron rod, chain, ordnance, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-08 were developed from the following lane specific data:

17a-m34g13s185f	2500803.9	286278.4
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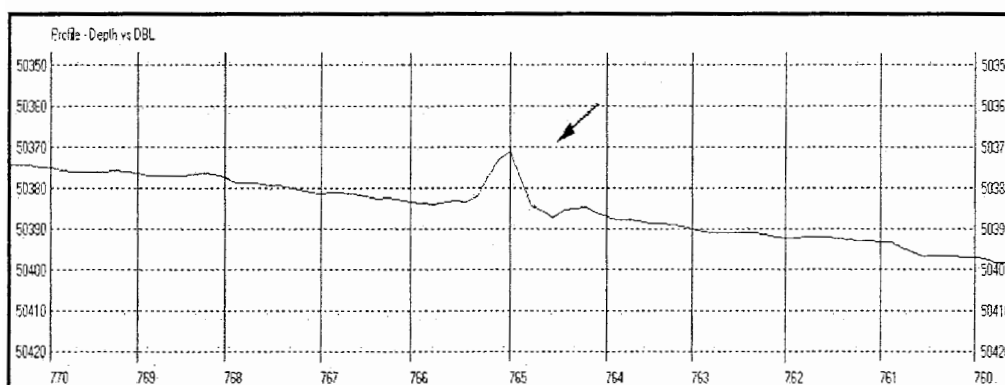


Figure 33. Magnetic target NRI-10.

Target Designation	Easting	Northing	Gammas	Duration
NRI-10	2500681.3	286580.2	16	108

Target NRI-10 was located on lane 18 on the New River Inlet bar. The detectable signature had a maximum intensity of 16 gammas and a maximum duration of 8 seconds over a distance of 108 feet (Figure 33). The contoured signature covered an area of approximately 2,500 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-10 were developed from the following lane specific data:

18d-d16g8s108f	2500681.3	286580.2
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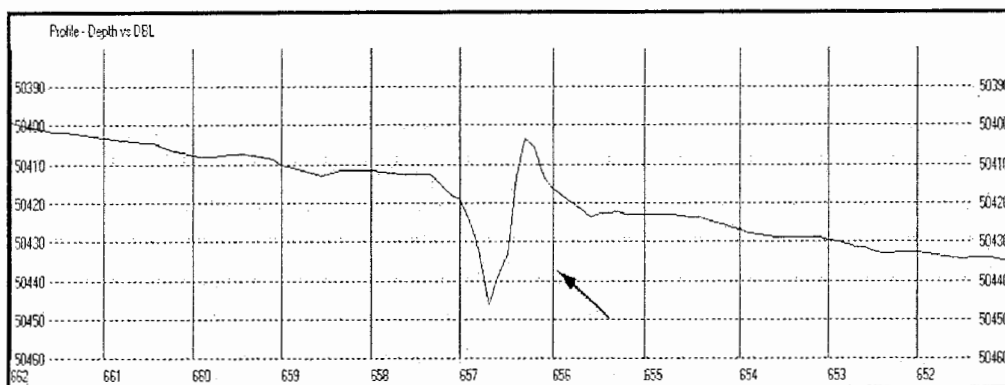


Figure 34. Magnetic target NRI-20.

Target Designation	Easting	Northing	Gammas	Duration
NRI-20	2500000.9	287499.2	43	175

Target NRI-20 was located on lanes 16 and 17. The detectable signature had a maximum intensity of 43 gammas and a maximum duration of 17 seconds over a distance of 175 feet (Figure 34). The contoured signature covered an area of approximately 9,100 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object or cluster of objects of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-20 were developed from the following lane specific data:

16f-d43g17s175f	2500000.9	287499.2
17b-d21g10s128f	2500018.3	287544.3

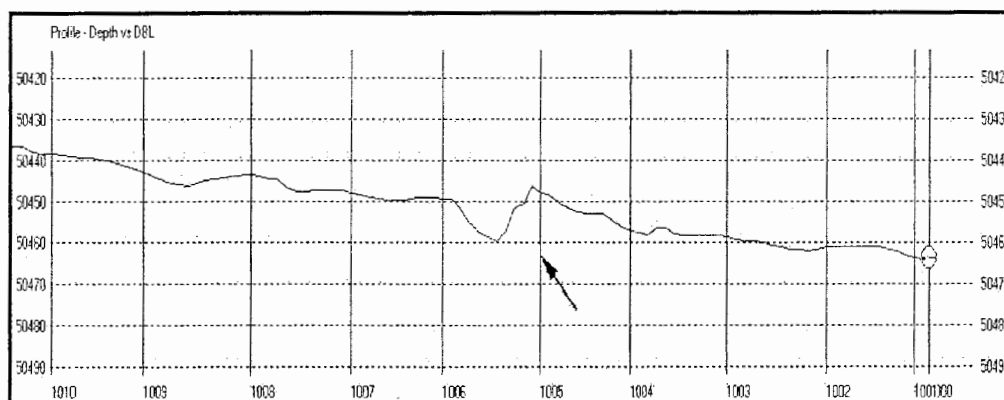


Figure 35. Magnetic target NRI-25.

Target Designation	Easting	Northing	Gammas	Duration
NRI-25	2498885.4	287969.2	13	123

Target NRI-25 was located on lane 2. The detectable signature had a maximum intensity of 13 gammas and a maximum duration of 13 seconds over a distance of 123 feet (Figure 35). The contoured signature covered an area of approximately 1,500 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-25 were developed from the following lane specific data:

2b-d13g13s123f	2498885.4	287969.2
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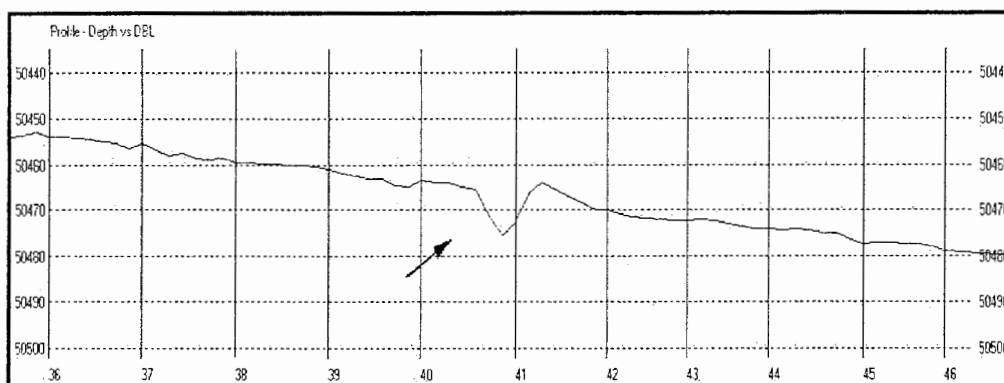


Figure 36. Magnetic target NRI-35.

Target Designation	Easting	Northing	Gammas	Duration
NRI-35	2498735.8	288533.0	11	206

Target NRI-35 was located on lane 5. The detectable signature had a maximum intensity of 11 gammas and a maximum duration of 14 seconds over a distance of 206 feet (Figure 36). The contoured signature covered an area of approximately 3,100 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-35 were developed from the following lane specific data:

5b-d11g14s206f	2498735.8	288533.0
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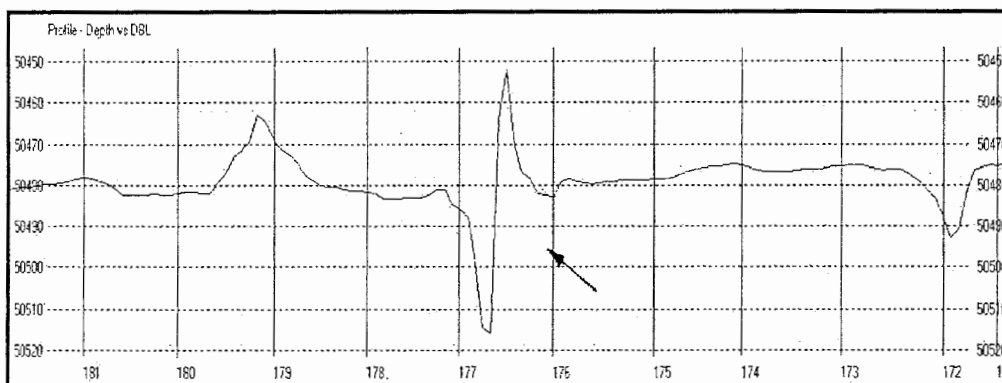


Figure 37. Magnetic target NRI-62.

Target Designation	Easting	Northing	Gammas	Duration
NRI-62	2499877.0	291012.8	64	140

Target NRI-62 was located on lane 17. The detectable signature had a maximum intensity of 64 gammas and a maximum duration of 17 seconds over a distance of 140 feet (Figure 37). The contoured signature covered an area of approximately 4,200 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-62 were developed from the following lane specific data:

17j-d64g17s140f	2499877.0	291012.8
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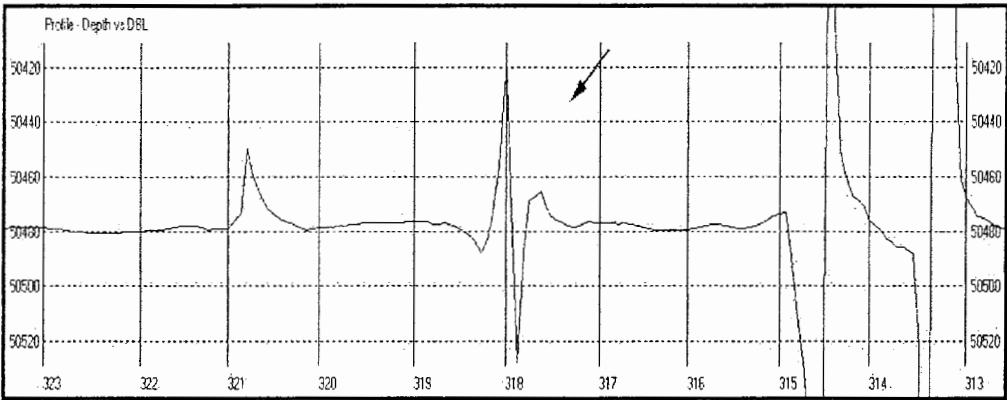


Figure 38. Magnetic target NRI-69.

Target Designation	Easting	Northing	Gammas	Duration
NRI-69	2500271.8	291310.0	112	135

Target NRI-69 was located on lane 21 on the edge of the survey area. The detectable signature had a maximum intensity of 112 gammas and a maximum duration of 21 seconds over a distance of 135 feet (Figure 38). The contoured signature covered an area of at least 3,500 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of moderate ferrous mass such as ordnance, wire rope, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-69 were developed from the following lane specific data:

21m-m112g21s135f	2500271.8	291310.0
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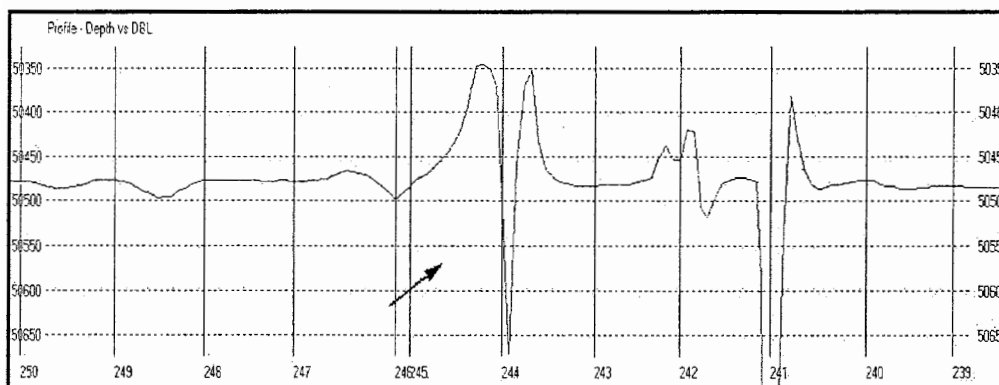


Figure 39. Magnetic target NRI-72.

Target Designation	Easting	Northing	Gammas	Duration
NRI-72	2500120.0	291515.0	326	197

Target NRI-72 was located on lane 18, 19 and 20. The detectable signature had a maximum intensity of 326 gammas and a maximum duration of 24 seconds over a distance of 197 feet (Figure 39). The contoured signature covered an area of approximately 21,400 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object or cluster of objects of moderate ferrous mass such as ordnance, wire rope, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-72 were developed from the following lane specific data:

18j-m216g15s144f	2500092.7	291513.2
19i-m326g24s197f	2500123.0	291522.7
20i-d81g18s164f	2500182.2	291475.6

## Conclusions and Recommendations

A survey of historical and archaeological literature and background research confirmed evidence of sustained maritime activity associated with the New River Inlet area. Documented transportation activities in the vicinity of New River Inlet and neighboring waterways date from the second half of the sixteenth century. New River became a focus for European activities as early as 1524 when the Italian navigator and explorer Giovanni da Verrazano dispatched a small group to meet Indians somewhere between New River Inlet and Bogue Inlet. Settlement along the banks of New River began during the second decade of the eighteenth century. Though positioned along the main road between New Bern and Wilmington Onslow County grew very slowly. The region's poor soils retarded agricultural development and the shallowness of New River Inlet bar hindered navigation and trade. New River became a small shipbuilding center during the late eighteenth to early nineteenth century but the shallow bar limited construction to shallow draft coastal vessels. The region remained a relative backwater until the establishment of Camp Lejeune during World War II. The presence of the marine base, which straddles both sides of New River, has limited development along the river and immediate coast and may, as a result, increased the potential for shipwrecks and other submerged cultural resources in the project area.

As a consequence of nearly 400 years of navigation in the coastal region of New River Inlet and settlement along the banks of New River since the eighteenth century, there is a high probability that historically significant submerged cultural resources are located in the current project area. While no shipwrecks in the project vicinity have been listed on the National Register of Historic Places, historical sources document that they exist; there are at least 25 shipwrecks recorded in the coastal waters off New River Inlet (Appendix A). Because of their association with the broad patterns of North Carolina and New River's history, the remains of sunken vessels preserve important information about the maritime heritage of the North Carolina coast. The files of the Underwater Archaeology Unit of the Division of Archives and History list two known sites in the survey area: 001/003NWI and 002NWI. Both were identified as the remains of small nineteenth century sailing vessels.

The remote sensing survey of New River Inlet identified a total of 111 magnetic and/or acoustic anomalies. Analysis of the data indicates that 29 of those targets (NRI-07, 08, 10, 20, 21, 22, 25, 27, 28, 29, 35, 36, 38, 39, 40, 41, 42, 46, 47, 51, 57, 58, 59, 60, 62, 66, 67, 69 and 70) have a moderate to high potential association with shipwreck material and/or other submerged cultural resources. Fourteen of the 29 comprise four discrete clusters: Cluster 1 (NRI-27, 28 and 29), Cluster 2 (NRI-38, 39, 40, 41 and 42), Cluster 3 (NRI-57, 58, 59 and 60) and Cluster 4 (NRI-66 and 67). Cluster 1 lies near the documented location of shipwreck site 001/003NWI, a small late nineteenth century vessel. Cluster 2 is located near an area of exposed iron eye fasteners on the western bank of New River and Clusters 3 and

4 are near an area of exposed ballast rock on the western bank of the river. Unless those targets can be avoided additional investigation to identify and assess the material generating each of the signatures is recommended.

Fifteen additional targets (NRI-77, 79, 81, 82, 83, 85, 86, 91, 92, 93, 97, 99, 100, 102 and 111) were also found to contain signature characteristics consistent with shipwreck material and/or other potentially significant submerged cultural resources. These targets also lie on a sandbar in extremely shallow water in the northern end of the survey area. While they are likely to represent debris associated with modern navigation in the inlet, a representative sample of three of the targets should be investigated to determine whether they are historically significant. Should they prove to be significant cultural resources then the remaining 12 anomalies should be identified and assessed.

The remaining 82 targets appear to have been generated by single ferrous objects such as small diameter iron rods, cable, pipes, small boat anchors, traps or other modern debris. No additional investigation of those sites is recommended in conjunction with the proposed project.

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## Appendix A

### Known Shipwrecks Located in the Vicinity of New River Inlet, North Carolina

Name	Type	Tons	Built	Date Lost	Cause & Location
Unknown	Unknown			July 1737	Sank near mouth of New River
<i>Sarah</i>	Sloop			December 1747	Bear Inlet
Unknown	Sloop			July 1752	Bear Inlet
<i>Henrietta</i>	Sloop			December 1764	Bear Inlet
Unknown	Schooner			April 1765	Below Bear Inlet
Unknown	Sloop			December 1765	Near New River
<i>Sally</i>	Schooner			March 1799	East side of New River Bar
<i>Seaman</i>	Schooner			March 1837	Cast away at New River Inlet
Unknown	Schooner			September 1815	Mouth of New River
<i>Pulaski</i>	Side Wheel Steamer	687	1837	June 1838	Exploded at New River Inlet
<i>Marchioness of Bute</i>	Ship			January 1853	Near Bear Inlet
<i>Albion</i>	Schooner			March 1858	Inside New River Bar
Multiple Unknown	Unknown			September 1861	Scuttled by state at Bear Inlet to protect from Union vessels
<i>USS Ellis</i>	Side wheel Steamer	100		November 1862	Burned near mouth of New River. Salvaged October 1867
<i>Nutfield</i>	Side Wheel Steamer	750 (450)	1862	February 1864	Burned at New River Inlet
Unknown	Schooner			March 1864	Burned at Bear Creek by Union forces
<i>G.O. Bigelow</i>	Schooner	90		December 1864	Destroyed at Bear Inlet by Union forces
Unknown*	Unknown			1880	Stranded at mouth of New River
<i>Lorenzo</i>	Schooner			August 1880	New River Bar
Unknown	Unknown			1881	Stranded at mouth of New River
Unknown	Unknown			1884	Stranded at mouth of New River
Unknown	Unknown			1890	Stranded at Bear Inlet
Unknown	Unknown			1890	Stranded at New River Inlet

Unknown	Unknown		1894	Stranded at New River Inlet
<i>Morris and Cliff</i>	Schooner	132	1890 January 1926	Lost approximately one mile west of Brown's Inlet

\* According to Littleton (1981), this unknown vessel could have been the schooner *Lorenzo* lost August 1880.

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## Appendix B

Table 1

New River Inlet Survey Area Target List

Target	Lane	Description	X-Coordinate	Y-Coordinate	Sonar	Priority/Recommendation
NRI-01	10	10d-d45g5s60f	2500730.7	285718.6	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-02	8	8f-p20g5s65f	2500611	285722.5	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-03	6	6g-d72g5s55f	2500518.6	285679.5	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-04	3	3a-d103g7s89f	2500376.9	285627.1	No	Low, signature suggestive of wire rope, cable, pipe or other modern debris. No additional investigation
NRI-05	21	21a-p9g7s91f	2501085.1	286234.4	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-06	14	14c-n6g7s80f	2500679.6	286203.1	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-07	12	12f-d41g12s126f	2500543.8	286225.7	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Additional investigation
NRI-08	17	17a-m34g13s185f	2500803.9	286278.4	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Additional investigation

NRI-09	8	8e-d18g8s77f	2500311.2	286241.6	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-10	18	18d-d16g8s108f	2500681.3	286580.2	No	<b>Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Additional investigation</b>
NRI-11	21	21c-p30g4s56f	2500670.9	286851.5	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-12	21	21d-d15g5s68f	2500642.5	286898.4	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-13	11	11d-p21g5s66f	2499993.9	287031.1	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-14	11	11e-p47g5s69f	2499938.7	287108.1	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-15	8	8d-d75g6s65f	2499748.8	287171.4	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-16	3	3b-p12g5s58f	2499445.4	287155.3	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-17	1	1a-n38g6s58f	2499363.4	287118.7	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-18	1	1b-p22g6s68f	2499289.2	287172.2	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation

NRI-19	6, 7	6f-n14g5s52f 7c-n17g4s55f	2499491.1 2499514.1	287377 287385.7	No	Low, signature suggestive of a cluster of small objects such as small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-20	16, 17	16f-d43g17s175f 17b-d21g10s128f	2500000.9 2500018.3	287499.2 287544.3	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Additional investigation
NRI-21	1	1c-d21g8s97f	2499031.7	287663.6	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Additional investigation
NRI-22	6	6e-d26g16s164f	2499240.3	287810.3	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Additional investigation
NRI-23	19	19b-d32g7s95f	2499825.3	288061.3	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-24	21	21e-n30g4s52f	2499789.5	288306.8	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-25	2	2b-d13g13s123f	2498885.4	287969.2	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Additional investigation
NRI-26	12, 13	12c-n11g5s46f 13a-d86g9s123f	2499295.4 2499364.4	288248.1 288263.9	No	Low, signature suggestive of a cluster of small objects such as small diameter pipe, trap, anchor or other small modern debris. No additional investigation

NRI-27	10	10b-p39g13s109f	2499149.1	288299	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Appears to be spatially associated with NRI-28 and 29. Additional investigation
NRI-28	11	11h-d35g11s152f	2499147.6	288382.7	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Appears to be spatially associated with NRI-27 and 29. Additional investigation
NRI-29	12, 13	12b-m142g17s139f 13b-n12g8s119f	2499204.5 2499249.9	288407.8 288419.3	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Appears to be spatially associated with NRI-27 and 28. Additional investigation
NRI-30	4	4a-p12g9s81f	2498788.3	288327.6	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-31	3	3d-d13g10s123f	2498745	288311.9	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-32	17	17c-d19g6s89f	2499414.8	288547.9	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-33	8	8c-n11g6s54f	2498923.6	288482.6	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-34	10	10a-p85g7s59f	2498981	288574.5	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation

NRI-35	5	5b-d11g14s206f	2498735.6	288533	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Additional investigation
NRI-36	15, 16	15b-d57g10s125f 16a-d21g22s154f	2498899.9 2498954.1	289229.9 289251.4	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Target is located near the reported position of wreck site 001/003NWI. Additional investigation
NRI-37	8	8a-n17g10s80f	2498549	289350.3	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-38	8	8n-p12g5s47f	2498618.9	289468.8	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Appears to be spatially associated with NRI-39, 40, 41 and 42. Additional investigation
NRI-39	9	9c-n9g17s190f	2498678.5	289469.5	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Appears to be spatially associated with NRI-38, 40, 41 and 42. Additional investigation
NRI-40	10	10n-n14g20s196f	2498750.9	289514.2	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Appears to be spatially associated with NRI-38, 39, 41 and 42. Additional investigation



NRI-41	11	11i-d73g27s285f	2498780.4	289467.9	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Appears to be spatially associated with NRI-38, 39, 40 and 42. Additional investigation
NRI-42	12	12x-n28g5s48f	2498833.3	289423.9	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Appears to be spatially associated with NRI-39, 39, 40 and 41. Additional investigation
NRI-43	10	10m-d43g11s109f	2498891	290022.6	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-44	14	14d-d344g11s118f 21	2499328.8 2499307.5	290167.6 290186.2	Yes, object approx. 2.8 feet round disturbing the water column	Acoustic and magnetic signatures suggest a buoy and sinker. No additional investigation
NRI-45	12	12v-n30g8s86f	2499243.5	290311.6	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-46	8, 9	8m-d160g12s109f 9d-n9g9s108f	2499097.1 2499155.5	290440.4 290429	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Iron eye fasteners, rope and other debris were noted exposed on the adjacent shoreline. Additional investigation
NRI-47	8, 9, 10, 11, 12	8i-d92g16s186f 9e-d179g20s237f 10i-d376g19s182f 11j-p80g9s102f 12u-p30g13s139f	2499225.2 2499234.8 2499272.7 2499343.7 2499363.1	290598.2 290588.6 290588.6 290592.2 290527.1	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Iron eye fasteners, rope and other debris were noted exposed on the adjacent shoreline. Additional investigation

NRI-48	15	15m-p16g19s157f	2499484	290490.9	No	Low, signature suggestive of wire rope, cable, pipe or other modern debris. No additional investigation
NRI-49	17	17l-m46g18s160f	2499583.1	290400.7	No	Low, signature suggestive of wire rope, cable, pipe or other modern debris. No additional investigation
NRI-50	15	15l-d10g5s41f	2499534.4	290556.3	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-51	12, 13	12t-d144g12s128f 13k-d29g14s110f	2499422.5 2499455.2	290640.5 290621	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Iron eye fasteners, rope and other debris were noted exposed on the adjacent shoreline. Additional investigation
NRI-52	16	16i-n30g8s88f	2499616.2	290551.8	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-53	18	18f-m420g12s122f 32 34	2499717.2 2499733.5 2499723.6	290565.4 290526.9 290520.7	Yes, linear object approx. 16 feet long and 0.7 feet wide	Acoustic and magnetic signatures suggest a section of small diameter pipe. No additional investigation
NRI-54	19, 20, 21	19m-d73g16s134f 20f-d123g10s104f 21q-d86g11s97f	2499795.9 2499815.4 2499863.5	290590.9 290580.5 290529.7	No	Low, signature suggestive of a cluster of small objects such as small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-55	10	10k-n14g8s76f	2499394	290805.3	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-56	12	12s-n9g9s95f	2499481.8	290799.8	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation

NRI-57	8, 9	8k-d99g8s76f 9g-d11g8s94f 42a	2499356.7 2499386.7 2499370.1	290921 290894.3 290945.5	Yes, long linear object approx. 98 feet long (continues into NRI-58)	High. Though the sonagram shows a length of cable material generating the anomaly could be associated with the remains of a vessel; a light scatter of ballast stone is present on the adjacent shoreline. Also appears to be spatially associated with NRI-58, 59 and 60. Additional investigation
NRI-58	7, 8, 9	7g-p481g4s42f 8j-m138g12s109f 9h-m18g15s178f 11 12 13 42b 43	2499346.8 2499389 2499445.4 2499338.9 2499358.5 2499364.3 2499364.1 2499373.3	291014 291029.2 291063 291011.4 291036.3 290993.9 291006.1 291054.7	Yes, two long linear objects: 1. approx. 10 feet long and 2. opposite end of piece from NRI-57	High. Though the sonagram shows several lengths of cable material generating the anomaly could be associated with the remains of a vessel; a light scatter of ballast stone is present on the adjacent shoreline. Also appears to be spatially associated with NRI-57, 59 and 60. Additional investigation
NRI-59	7	7h-d554g4s43f	2499356.6	291113.6	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. A light scatter of ballast stone is present on the adjacent shoreline. Appears to be spatially associated with NRI-57, 58 and 60. Additional investigation
NRI-60	10	10j-d18g16s148f	2499486.5	291022.4	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. A light scatter of ballast stone is present on the adjacent shoreline. Appears to be spatially associated with NRI-57, 58 and 59. Additional investigation
NRI-61	17, 18	17k-n19g14s114f 18g-d172g9s96f 36a 36b	2499764.8 2499810.4 2499789.8 2499804.8	290783.9 290774.2 290764.4 290770.8	Yes, two linear objects: 1 approx. 22 feet long by .045 feet wide and 2. Approx. 12.5 feet long by 1 foot wide	Acoustic and magnetic signatures suggest a two sections of pipe. No additional investigation

NRI-62	17	17j-d64g17s140f	2499877	291012.8	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Additional investigation
NRI-63	19, 20, 21	19l-p14g10s79f 20g-d211g10s106f 21n-n30g12s84f	2500027.6 2500060.8 2500127.9	291083.5 291077.6 291070.5	No	Low, signature suggestive of a cluster of small objects such as small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-64	19	19k-p20g12s99f	2500065.5	291186.3	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-65	18	18h-n8g10s97f	2500035.9	291223.4	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-66	8, 9	8i-d133g16s132f 9i-d222g13s142f	2499593 2499595.9	291394.9 291384	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. A light scatter of ballast stone is present on the shoreline just south of the target. Appears to be spatially associated with NRI-67. Additional investigation
NRI-67	6	6d-d148g10s85f	2499467.1	291412	No	High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. A light scatter of ballast stone is present on the shoreline just south of the target. Appears to be spatially associated with NRI-66. Additional investigation
NRI-68	9, 10	9i-p6g6s62f 10i-p24g7s67f	2499649.6 2499660.8	291488.4 291486.3	No	Low, signature suggestive of a cluster of small objects such as small diameter pipe, trap, anchor or other small modern debris. No additional investigation

NRI-69	21	21m-m112g21s135f	2500271.8	291310	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Additional investigation
NRI-70	19, 20	19j-n32g9s107f 20h-p48g9s89f 39a 39b	2500157 2500191 2500191.5 2500225.8 2500039.8	291364.8 291368 291359.6 291408.7 291434.9	Yes, linear object approx. 57.5 feet long partially buried between sand ridges  No	Acoustic and magnetic signatures suggest a length of cable. No additional investigation  Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-71	17	17i-p18g8s71f			No	
NRI-72	18, 19, 20	18j-m216g15s144f 19j-m326g24s197f 20i-d81g18s164f	2500092.7 2500123 2500182.2	291513.2 291522.7 291475.6	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Additional investigation
NRI-73	4	4f-n79g10s65f	2499303	291593.4	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-74	3	3e-p115g4s50f	2499220.3	291621.8	No	Low, signature suggestive of wire rope, cable, pipe or other modern debris. No additional investigation
NRI-75	11, 12	11k-n17g9s100f 12p-p85g5s50f	2499642.6 2499670.5	291718.7 291723.7	No	Low, signature suggestive of a cluster of small objects such as small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-76	15	15h-n11g7s56f	2499862.1	291683.1	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation

NRI-77	19, 20, 21	19h-m98g12s95f 20j-d139g22s225f 21k-d1013g17s104f	2500053.5 2500136.6 2500157.8	291707 291708.3 291758.2	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation
NRI-78	18, 19	18k-d19g10s94f 19g-d135g8s60f	2499985.9 2500024.6	291802.5 291803.4	No	Low, signature suggestive of a cluster of small objects such as small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-79	16, 17	16k-m56g14s180f 17h-d71g26s182f	2499828.2 2499890.1	291937.6 291879.3	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation
NRI-80	6	6c-d202g11s76f	2499307.6	291848.7	No	Low, signature suggestive of wire rope, cable, pipe or other modern debris. No additional investigation
NRI-81	17, 18	17g-d105g14s92f 18l-p13g16s176f	2499852.4 2499881.5	292050.1 292058.3	No	Moderate, while the signature characteristics, intensity and duration, suggest a single object or cluster of objects of low ferrous mass relative to size such as wire rope or small diameter pipe material generating the anomaly could be associated with the remains of a small vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation

NRI-82	12, 13	12n-d32gt13s119f 13g-m121g17s115f	2499571.9 2499624.4	292071.6 292087.1	No	Moderate, while the signature characteristics, intensity and duration, suggest a single object or cluster of objects of low ferrous mass relative to size such as wire rope or small diameter pipe material generating the anomaly could be associated with the remains of a small vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation
NRI-83	16	16l-d55g11s135f	2499762.4	292106.4	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation
NRI-84	10	10h-d25g9s71f	2499408.8	292109.7	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-85	11	11l-d144g12s172f	2499488.9	292172.2	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation
NRI-86	12, 13	12m-d28g5s43f 13f-p101g13s77f	2499538.1 2499568.5	292163.3 292179	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation

NRI-87	9	9k-d9g9s99f	2499357.8	292212.4	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-88	8	8h-p7g9s75f	2499317.3	292201.4	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-89	11	11m-d167g8s82f	2499454.7	292269.9	No	Low, signature suggestive of wire rope, cable, pipe or other modern debris. No additional investigation
NRI-90	7	7j-n36g4s46f	2499276.7	292219.9	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-91	13	13e-p58g15s104f	2499513.6	292317.6	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation
NRI-92	12	12l-d51g12s126f	2499470.8	292339.5	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation
NRI-93	11	11n-d57g10s101f	2499401.7	292385	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation



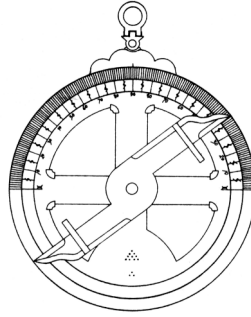
NRI-94	12, 13	12k-p52g7s67f 13d-p66g13s112f	2499417.1 2499457	292419.7 292447.9	No	Low, signature suggestive of a cluster of small objects such as small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-95	18, 19	18m-p22g3s34f 19f-d125g21s134f	2499750 2499793.2	292445.7 292451	No	Low, signature suggestive of a cluster of small objects such as small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-96	16	16m-d26g9s110f	2499650.8	292424.7	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-97	15	15d-d32g18s131f	2499600.8	292424.8	No	<i>Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation</i>
NRI-98	6a	6a-d127g8s85f	2499104.8	292331.5	No	Low, signature suggestive of wire rope, cable, pipe or other modern debris. No additional investigation
NRI-99	9, 10	9l-n45g10s110f 10g-d16g11s105f	2499225.5 2499275.7	292439.8 292446.7	No	<i>Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation</i>

NRI-100	12	12j-d33g11s110f	2499335.8	292506.9	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation
NRI-101	9	9m-d110g8s90f	2499154.4	292511.1	No	Low, signature suggestive of wire rope, cable, pipe or other modern debris. No additional investigation
NRI-102	15	15c-d59g16s118f	2499492.6	292548.4	No	Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation
NRI-103	14	14k-d18g7s86f	2499416.2	292576.2	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-104	9	9n-p57g6s67f	2499087.3	292599.4	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-105	11	11o-d64g11s119f	2499185	292649.9	No	Low, signature suggestive of wire rope, cable, pipe or other modern debris. No additional investigation
NRI-106	13	13c-d22g11s93f	2499249.2	292703.9	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-107	8	8g-d44g10s70f	2498819.5	292833.4	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation

NRI-108	10	10f-n20g7s65f	2498927.6	292894.5	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-109	11	11p-p7g7s71f	2498968.7	292896.1	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-110	12	12h-n15g11s100f 19	2499014.2 2499005.5	292917.8 292941.3	Yes, object measuring approx. 2 feet square	Low, sonagram indicates a trap or other modern debris. No additional investigation
NRI-111	21	21f-m76g21s154f	2499402.6	293157.6	No	<i>Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. However, the target is located on a sandbar and the magnetic signature may have been created by the sensor striking the bottom. No additional investigation</i>

Recommended targets are marked in bold.

Potentially significant targets located on the sandbar are italicized.



## Tidewater Atlantic Research, Inc.

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21 January 2008

Mr. Ken Willson  
Coastal Planning & Engineering of North Carolina  
330 Shipyard Boulevard  
Wilmington, North Carolina 28412

Dear Mr. Willson:

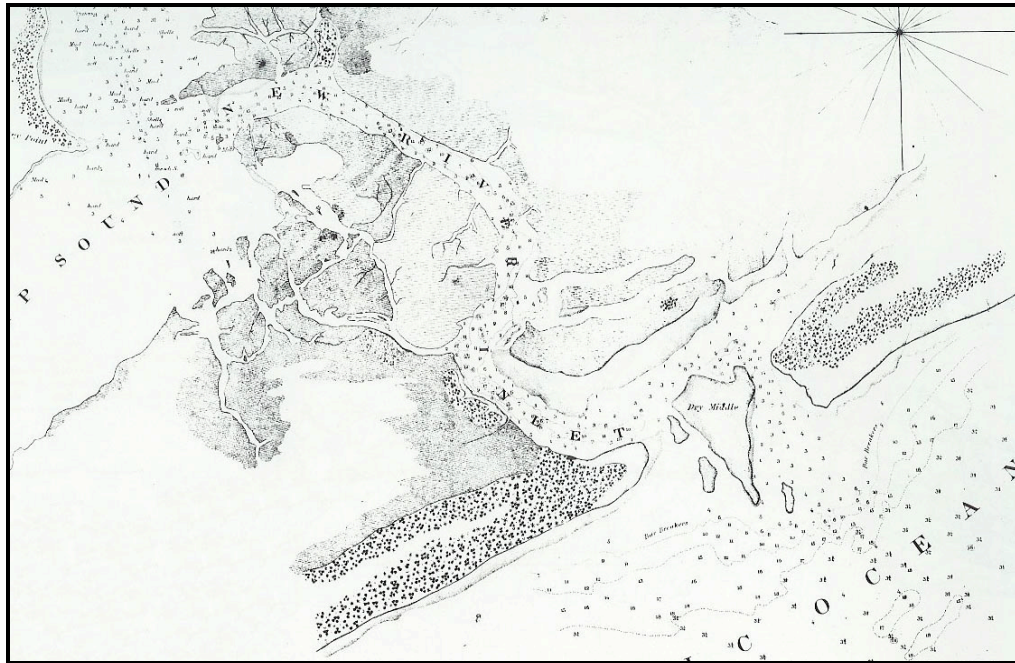
Enclosed please find three copies of our report entitled: *A Submerged Cultural Resources Remote-Sensing Survey, New River Inlet Channel Realignment, Onslow County, North Carolina*. We have addressed each of the comments we received from your office in the final version of the report. Each of the documents includes a CD that has both a Microsoft Word and PDF copy of the report.

Best regards,

Gordon P. Watts, Jr.  
Director

Enclosure-3

***A Submerged Cultural Resources Remote-Sensing Survey  
New River Inlet Channel Realignment  
Onslow County, North Carolina***



Submitted to:

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## **Abstract**

Coastal Planning and Engineering of North Carolina (CPE-NC) is working with the Town of North Topsail Beach on a project to realign the navigation channel for New River Inlet. In order to determine the proposed project's impact on potentially significant submerged cultural resources, CPE-NC contracted with Tidewater Atlantic Research (TAR) of Washington, North Carolina to conduct a systematic magnetometer and side-scan sonar survey of the proposed channel realignment site. The proposed survey was designed to locate and identify submerged cultural resources in the study area and generate sufficient data to make an initial assessment of each target's significance and provide insight into the necessity for avoidance. Prior to the fieldwork, historical and documentary research previously carried out by TAR was re-examined to develop a proper framework for submerged cultural resource assessment in the New River Inlet area. Field research was conducted as weather permitted on 6 November 2004, 25 October and 15 November 2007. Analysis of the remote-sensing data revealed a total of 36 magnetic anomalies. Of those, 10 are located within the proposed channel realignment and 5 lie within a 100-foot buffer. Sonar data identified no acoustic anomalies and confirmed that none of the material generating the magnetic signatures was exposed on the bottom surface. Analysis of the magnetic anomalies indicates that material generating three of the signatures has a moderate to high potential for association with historically significant submerged cultural resources. However, those anomalies lie outside the area of potential impact. All of the remaining anomalies have signature characteristics that are representative of small ferrous objects such as small diameter iron rods, chain, cable, pipes, small boat anchors, traps or other modern debris. None of the signatures have characteristics that suggest an association with historically significant submerged cultural resources. In light of the findings, the proposed channel realignment dredging will not impact any historically significant submerged cultural resources. No additional investigation of the project area is recommended in conjunction with the proposed project.

## Table of Contents

	<b>Page</b>
Abstract .....	i
Table of Contents.....	ii
List of Figures .....	iii
Introduction.....	1
Project Location.....	3
Research Methodology.....	4
Literature and Historical Research.....	4
Remote-Sensing Survey .....	4
Data Analysis .....	5
Historical Background of the New River Region.....	6
Previous Investigations .....	23
Description of Findings.....	25
High Priority Anomalies.....	27
Moderate Priority .....	29
Conclusions and Recommendations.....	30
References Cited.....	32
Appendix A: Known Shipwrecks Located in the Vicinity of New River Inlet, North Carolina	
Appendix B: New River Inlet Survey Area Target List	

## List of Figures

	<b>Page</b>
Figure 1. Project location chart (NOAA Chart 11542 New River).....	2
Figure 2. Chart showing survey area and proposed channel realignment (NOAA Chart 11542 New River).....	3
Figure 3. Ferry locations along New River depicted in Wimble 1738 map (Littleton 1981:39).....	8
Figure 4. Illustration of the Swansboro-built steamer <i>Prometheus</i> (Watson 1995:51).....	14
Figure 5. 1851 USCS map showing soundings of lower New River and New River Inlet (Guthorn 1984:111). ....	15
Figure 6. TAR 2004 New River Project location map (7.5” USGS, New River Inlet, NC, 1997). ....	25
Figure 7. New River Inlet survey area magnetic contour map showing anomaly locations, the proposed channel alignment and a 100-foot buffer. ....	26
Figure 8. Magnetic target NRI-21. ....	27
Figure 9. Magnetic target NRI-22. ....	28
Figure 10. Magnetic target NRI-07. ....	29



## **Introduction**

Coastal Planning and Engineering, Inc. of North Carolina (CPE-NC) of Wilmington, North Carolina is currently working with the Town of North Topsail Beach on a project to realign the navigation channel for New River Inlet. In order to determine the proposed project's impact on potentially significant submerged cultural resources, CPE-NC contracted with Tidewater Atlantic Research, Inc. (TAR) of Washington, North Carolina to conduct a systematic magnetometer and side-scan sonar survey of the proposed channel realignment site.

The proposed survey was designed to locate and identify submerged cultural resources in the study area and generate sufficient data to make an initial assessment of each target's significance and provide insight into the necessity for avoidance (Figure 1). The survey methodology was developed to comply with guidelines for submerged cultural resource surveys in North Carolina created by the North Carolina Department of Cultural Resources. Those guidelines follow the criteria established by the National Historic Preservation Act of 1966 (Public Law 89-665), the National Environmental Policy Act of 1969 (Public Law 11-190), Executive Order 11593, the Advisory Council on Historic Preservation Procedures for the protection of historic and cultural properties (36 CFR Part 800) and the updated guidelines described in 36 CFR 64 and 36 CFR 66. The results of the investigation will furnish CPE-NC with the archaeological data required for complying with submerged cultural resource legislation and regulations.

Prior to the fieldwork, historical and documentary research previously carried out by TAR was re-examined to develop a proper framework for submerged cultural resource assessment in the New River Inlet area. Field research was conducted as weather permitted on 6 November 2004, 25 October and 15 November 2007. All marine remote-sensing operations were carried out from a 25-foot shallow draft survey vessel. Magnetic data was generated by both a GEOMETRICS 881 cesium-vapor magnetometer and a QUANTRO SENSING handheld proton precession magnetometer. Acoustic data was generated by a MARINE SONICS 600kHz side-scan sonar. A TRIMBLE AgGPS differential global positioning system (DGPS) was employed to provide sub-meter positioning and vessel navigation and data collection was controlled by HYPACK MAX<sup>®</sup> survey software.

Analysis of the remote-sensing data revealed a total of 36 magnetic anomalies. Of those, only 10 are located within the proposed channel realignment. An additional 5 anomalies lie within a 100-foot buffer. Sonar data confirmed that none of the material generating the magnetic signatures was exposed on the bottom surface. The remaining 21 magnetic anomalies lie outside the proposed channel realignment.

Project personnel consisted of principal investigator Gordon P. Watts and archaeologists Raymond Tubby, Harry Pecorelli and Joshua Daniel. Dr. Watts, Ms. Robin Arnold and Mr. Daniel prepared this report for production.

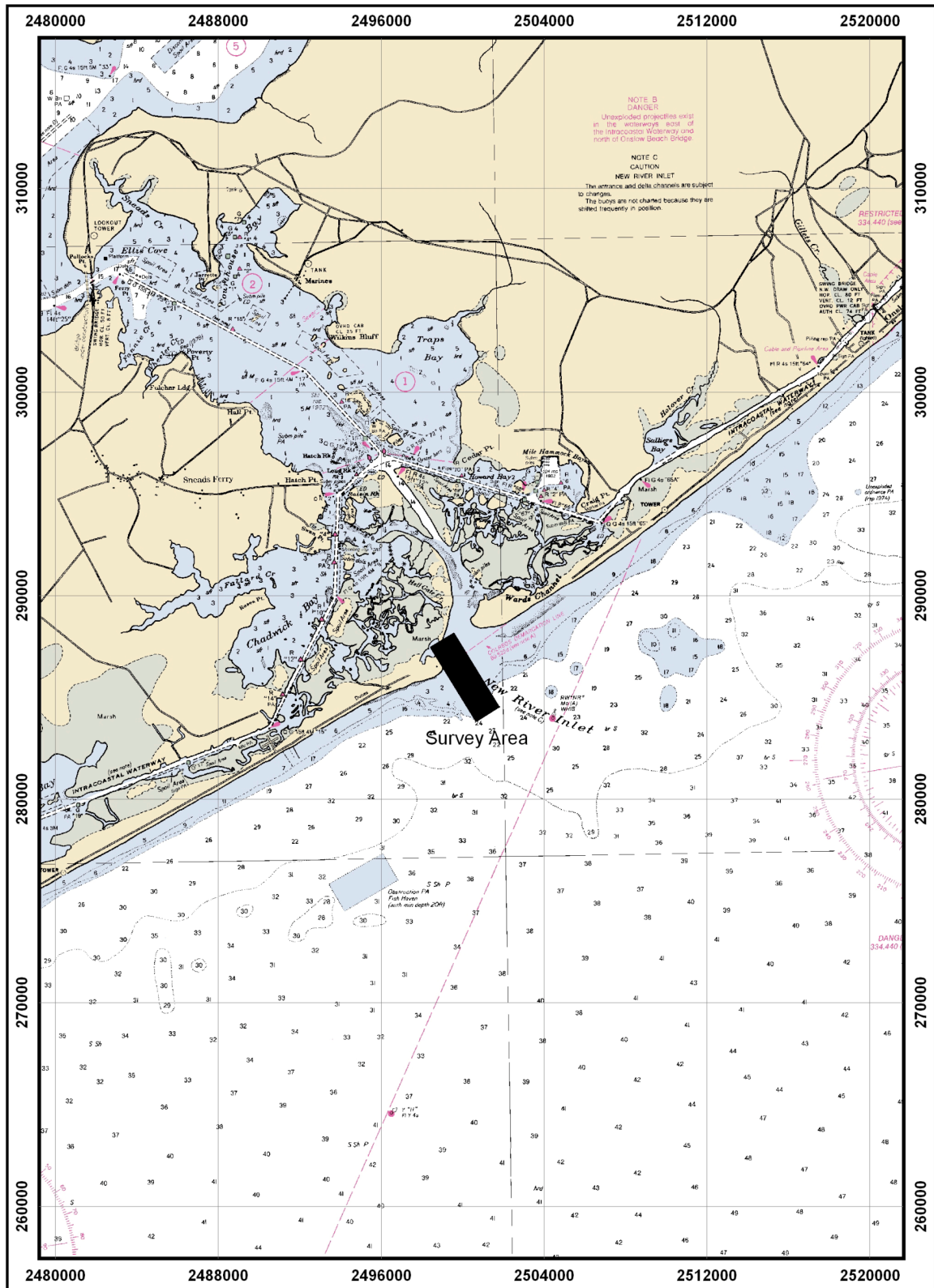
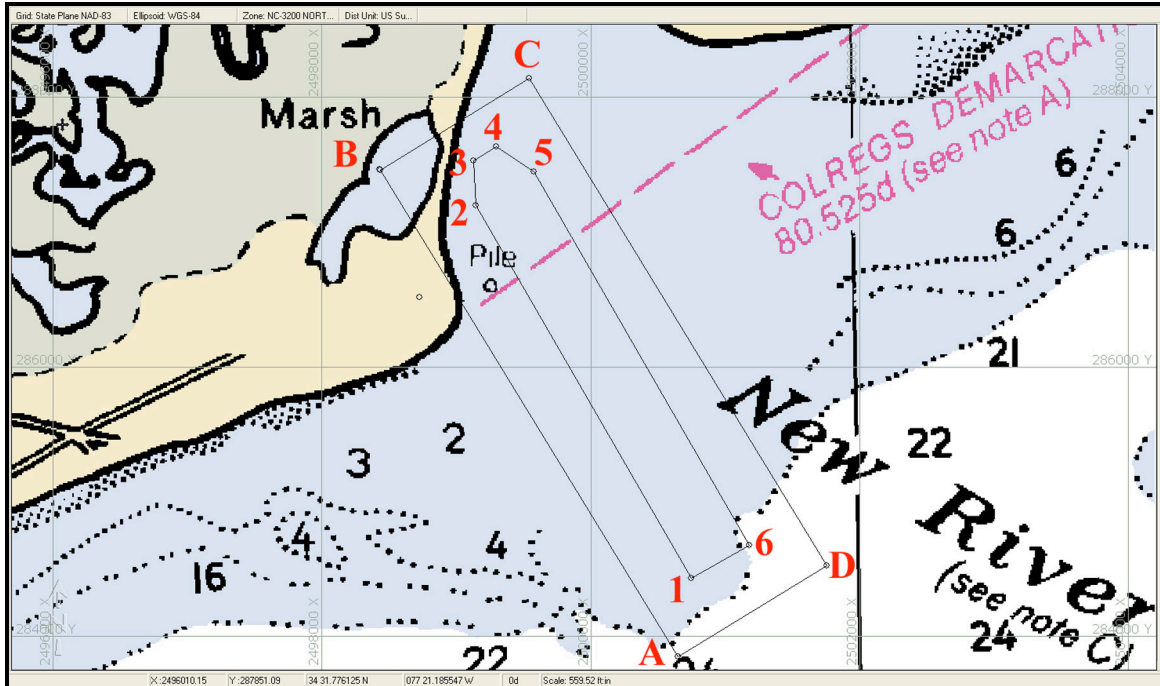


Figure 1. Project location chart (NOAA Chart 11542 New River).



**Figure 2. Chart showing survey area and proposed channel realignment (NOAA Chart 11542 New River).**

## Project Location

New River Inlet is located in Onslow County, North Carolina and is primarily fed by the New River and Stump Sound. The mouth of New River Inlet is located between Topsail Island and West Onslow Beach. The 1,300-foot wide survey area extends from outside the 16-foot contour offshore of the New River Inlet bar approximately 4,250 feet north-northwest to include the northeastern end of Topsail Island (Figure 2). The proposed 500-foot wide and 3,500-foot long channel realignment lies within the survey area. Water depth in the survey area ranges between 0 to 18 feet.

Coordinates for the survey area in North Carolina State Plane, U.S. Survey feet, NAD 83 are:

Point	Easting	Northing
A	2498434	287461
B	2499543	288140
C	2501758	284526
D	2500650	283847

Coordinates for the channel alignment in North Carolina State Plane, U.S. Survey feet, NAD 83 are:

Point	Easting	Northing
1	2500746	284427
2	2499146	287199
3	2499126	287533
4	2499300	287633
5	2499579	287449
6	2501179	284677

## Research Methodology

### Literature and Historical Research

TAR personnel conducted a literature search of primary and secondary sources to assess the potential for finding significant historic and/or cultural resources within the proposed channel realignment. That research built upon and refined previous historical background assessments of the region developed by TAR. Preliminary wreck-specific information was collected from secondary sources that include: *The Encyclopedia of American Shipwrecks* (Berman 1972); *Merchant Steam Vessels of the United States 1790 - 1868* (Lytle and Holdcamper 1975); *Shipwrecks of the Civil War: The Encyclopedia of Union and Confederate Naval Losses* (Shomette 1973); *Shipwrecks in the Americas* (Marx 1983); *Shipwreck Encyclopedia of The Civil War: North Carolina, 1861-1865* (Spence 1991); *Shipwrecks of North Carolina* (Gentile 1992); *The Naval War of 1812: A Documentary History* (Dudley 1985); *Graveyard of the Atlantic* (Stick 1952); *Naval History of the Civil War* (Porter 1985) and other published materials. A survey of selected North Carolina newspapers and the *Wreck Information List* of the U.S. Hydrographic Office generated additional information.

Personnel at the Underwater Archaeology Unit of the Division of Archives and History (UAU) at Kure Beach, North Carolina were also contacted for shipwreck data associated with New River Inlet and the New River and Topsail Island area.

### Remote-Sensing Survey

Field investigation of the study area was designed to accomplish two major research goals. The first was to employ magnetic and acoustic remote-sensing equipment to identify anomalies with signature characteristics similar to those previously demonstrated to be associated with historically significant submerged cultural resources. The second objective was to assess each target signature and identify those that required avoidance

procedures and those that could be dismissed as indicative of modern debris. To accomplish these objectives, TAR archaeologists collected data with a cesium vapor magnetometer and a 600 kHz side-scan sonar.

Working from 25 and 20-foot, shallow draft survey vessels, TAR personnel collected magnetic data with an 881 GEOMETRICS cesium vapor magnetometer capable of plus or minus 0.1 gamma resolution. To produce the most comprehensive magnetic record, the sensor was deployed approximately 30 feet aft of the DGPS antenna and maintained just below the water surface due to shoal water and potential snags and debris in the water column. Magnetic data was recorded as a data file associated with the computer navigation system and contour plotted using QUICKSURF® computer software to facilitate anomaly location and definition of target signature characteristics. Acoustic data was collected using a 600 kHz MARINE SONICS digital side-scan sonar. The side-scan sonar transducer was towed just below the water surface approximately 3 feet aft and 6 feet to starboard of the DGPS antenna. A 50-meter sonar range scale provided greater than 100% coverage of the bottom surface in the survey area. To ensure sufficient information would be available to locate any potentially significant targets in the project area, vessel speed was maintained at 2 to 3 knots and remote-sensing data collected along lanes spaced on 50-foot intervals.

A TRIMBLE AgGPS was used to control navigation and data collection in the survey area. The system has an accuracy of plus or minus three feet, and can be used to generate highly accurate coordinates for the computer navigation system. The DGPS system was employed in conjunction with a Compaq 2.4 GHz laptop loaded with HYPACK®MAX navigation and data collection software program. All magnetic and acoustic records were tied to positioning events generated by HYPACK®MAX. Positioning data generated by the navigation system were tied to magnetometer and acoustic records by regular annotations to facilitate target location and anomaly analysis. Annotations included lane number, event, date and target identification. All data were plotted to the North Carolina State Plane, U.S. Survey Foot, NAD 83.

The small terrestrial portion of the survey area was investigated on foot. Magnetic data was collected using a QUANTRO SENSING proton precession magnetometer. Positioning and data recording was accomplished by a handheld TRIMBLE GPS.

### **Data Analysis**

To ensure reliable target identification and assessment, analysis of the magnetic and acoustic data was carried out as it was generated. Using QUICKSURF® contouring software, magnetic data generated during the survey was contour plotted at 10-gamma intervals for analysis and accurate location of the material generating each magnetic anomaly. Magnetic targets were isolated and analyzed in accordance with intensity, duration, areal extent and other signature characteristics. Sonagram signatures associated with magnetic targets were analyzed on the basis of configuration, areal extent, elevation, target intensity and contrast with background and shadow image and were also reviewed for possible association with identified magnetic anomalies.

Data generated by the remote-sensing equipment was developed to support an assessment of each magnetic and acoustic signature. Analysis of each target signature included consideration of magnetic and sonar signature characteristics previously demonstrated to be reliable indicators of historically significant submerged cultural resources. Assessment of each target includes avoidance options and possible adjustments to avoid potential cultural resources. Where avoidance is not possible the assessment will include recommendations for additional investigation to determine the exact nature of the cultural material generating the signature and its potential *National Register of Historic Places (NRHP)* significance. Historical evidence was developed into a background context and an inventory of shipwreck sites that identified possible correlations with magnetic targets (Appendix A). A magnetic contour map of the survey area was produced to aid in the analysis of each anomaly. All targets were listed and described (Appendix B) and a map produced that showed their location within the project area.

## **Historical Background of the New River Region**

Europeans first surveyed the New River Inlet region during the first quarter of the sixteenth century. In 1524, Giovanni da Verrazzano dispatched a small group of sailors to meet aboriginals somewhere between New River Inlet and Bogue Inlet. The Florentine navigator was engaged by King Francis I to explore the American coast from North Carolina to Maine. Verrazzano also described the coastline of Onslow County in journals related to his surveys. Some sixty years later, according to Ralph Lane's chronicles of Sir Richard Grenville's expedition and John White's map [1585], the English, with the support of navigator Simon Ferdinando, fished in Onslow County waters on their way to establish a colony on Roanoke Island. Although Grenville and his companions disliked the Portuguese pilot, he was the "only skilled navigator alive with previous experience in negotiating the treacherous Carolina coastline (Glasgow 1966:120-121). Before John White arrived at Roanoke Island in 1587 to search for what today is known as the Lost Colony, he probably stopped on Onslow County's barrier islands. From White's last visit to the North Carolina coast in 1590 to the beginning of the eighteenth century [a period of extensive exploration] Europeans may have visited or settled the Onslow County area, although they left no documentary evidence.

Settlement along the New River drainage basin dates to the first quarter of the eighteenth century. According to *The North Carolina Gazetteer*, New River appeared as the Corani River on the 1729 Moll map and as New River on the 1733 Moseley map. The name New River Inlet also appeared on Moseley's chart (Powell 1968:350). Development began with an influx of English and Scottish settlers followed by Welsh and Irish colonists. The majority of these early settlers came by way of other American settlements, including a large number of families from the Albemarle region of North Carolina. There were also settlers who migrated south from Maryland, Virginia and the New England colonies. The first land grants made to attract settlers to New River were for tracts located on the sounds, rivers and major creeks, as the waterways provided the most convenient arteries of transportation and trade. New River became one of the centers of early settlement much like other rivers up and down the eastern seaboard. The

concentration of people along the river and its adjoining waterways prompted the construction of small craft utilized for local transportation. Dugout cypress canoes were among the first vessels built in the New River area. By the mid-eighteenth century, colonists also constructed cunners, rowboats, canoes, periaguas and small sailing vessels.

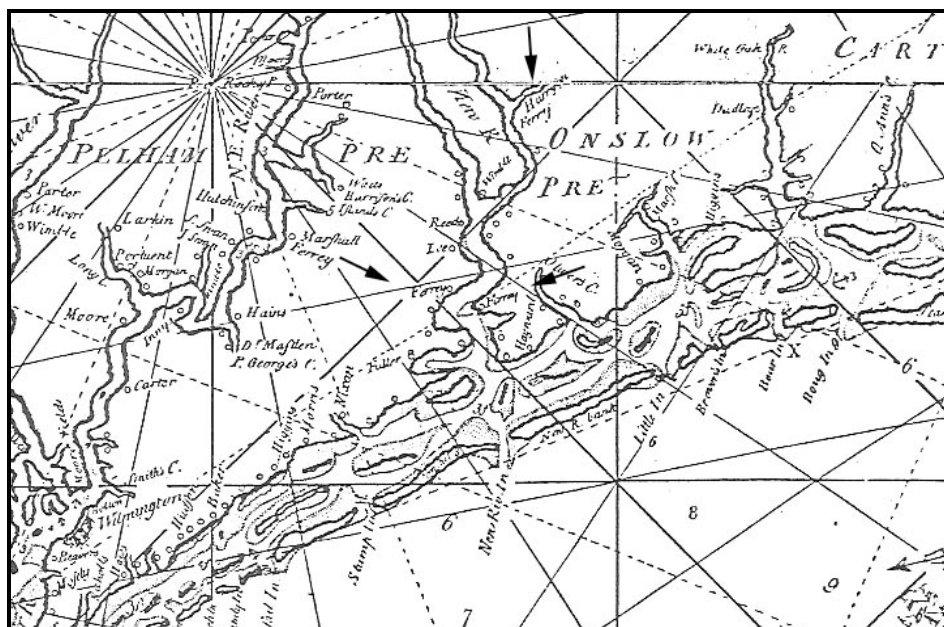
A September 1716 land grant made to Richard Anderson appears to be the first documented tract actually located along the New River. The conveyance implies that the place name New River was in use prior to the execution of that document (Littleton 1981:26, 33). As early as 1714, North Carolina Chief Justice Christopher Gale received a grant of 750 acres located between Bear and Brown Inlets. Justice Gale, like many early New River landowners never occupied the property and subsequently sold his parcel to Phillip Dexter (Onslow County Register of Deeds [OCD] 1:25). Dexter had also received a grant for 640 acres on the west side of the mouth of Bear Creek. With brothers Ebenezer and Hope, Phillip Dexter began to develop property along New River (Gwynn 1961:64).

Although initial population growth was slow, due at least in part to land speculation, a steady influx of colonists commenced circa 1720. By mid-November 1723, Charlesworth Glover acquired approximately 310 acres on the east side of New River. In May 1726, Hope Dexter received a grant for 640 acres of land along a tributary off New River called Mittum's [or Mittam] Creek. Prior to willing 320 acres of that tract to his brother Phillip in 1746, Hope moved to establish the town of Johnston there (Gwynn 1961:125). Within three months, a 60-acre tract on the east side of New River was granted to William Lewis, Jr. (Littleton 1981:34). Another 1726 deed identified a New River landowner named Charles Harrison. Harrison's deed for property along the west side of the mouth of New River referred to its former owner, Captain William Stone. At about the same time, 420 acres were granted to a Mary Lillington. Official records revealed that Mary Lillington had two resident neighbors, Stephen Howard and Andrew Clark (Littleton 1981:35). The Edward Moseley map [1733] shows the M. Lillington homestead situated along the New River.

By 1733, settlers from Bertie County increased the number of area residents to approximately 100 families (Lefler and Newsome 1963:72). Although waterways provided the major avenue of trade and transportation for early New River settlers, a roadway was cleared to connect the New River with New Bern on the Neuse River and Brunswick Towne on the Cape Fear River. Work must have been well underway by 1726, for in that year the Carteret court appointed Edmund Ennett as overseer for the segment connecting New River with the intersection of a cross path that led to the White Oak River. Ennett had previously resided along Brice's Creek and may have purchased New River property by 1723. The freeholder/juryman was also empowered by the Carteret court to operate a ferry service on New River just south of the mouth of Kisable Creek [contemporary Everett's Creek] where the roadways originated (Littleton 1981:37; North Carolina Division of Archives and History [NCDAH] 1728).

Another ferry landing located along the lower New River was utilized by 1731. During mid-November 1731, John Williams conveyed Ferry Point Plantation to Christian

Heidelberg. Court documents suggested that Heidelberg resided on the 400-acre parcel and operated the Ferry Point landing before the transfer. The 1733 Moseley map illustrated the location of the “Heidelberg Ferry,” while the 1738 Wimble chart simply identified the “Ferry” site (Figure 3). Although Heidelberg moved to another plantation on Stone’s Bay, he continued to manage the ferry operation until his death circa 1741 (Littleton 1981:38, 60).



**Figure 3. Ferry locations along New River depicted in Wimble 1738 map (Littleton 1981:39).**

John Brickell surveyed North Carolina’s barrier islands in 1729 and commented on the nature of New River Inlet, as well as nearby inlets. In *The Natural History of North Carolina*, the Irish physician wrote: “Between the Islands and Sand Banks, are Inlets of several depths of Water, some admitting only of Sloops, Schooners, Brigantines, and Vessels of small Burthen, and such [inlets] are...Bogue Inlet, Bear Inlet, Brown’s Inlet, Little Inlet, New River Inlet, Stumpy Inlet, Sandy Inlet, and Rich Inlet...many of these being only Navigable for Periaugers and small Crofts, by reason of their many Shoals which are continually shifting by the violence of Storms, and particularly, North East Winds,...” (Brickell 1968[1737]:2). Brickell’s observations were supported by Captain James Wimble’s navigational chart of 1738. The New Carthage [Wilmington] cartographer identified the depth of the New “Rever” channel at only five feet, and noted that passages along some inlets were only suitable for “Conoas” and a “petaugo” (Cumming 1969:34).

In early 1731, the inhabitants of Topsail, New River and White Oak petitioned Royal Governor George Burrington to form a new precinct to make court functions and attendance less of a strenuous undertaking (Littleton 1981:43). On 23 November 1731, Governor Burrington, in conjunction with His Majesty’s Council, issued an executive order to establish Onslow Precinct from portions of Carteret and New Hanover Precincts.



Although the North Carolina Colonial Assembly refused to acknowledge establishment of Onslow Precinct at the 1733 Edenton assembly, the functions of local government continued until recognition was granted the following year (Conner 1919:144). Court sessions initially held in a private residence were shifted to a public structure following the construction of a suitable building on Jarrott's Point.

By 1739, Onslow Precinct was elevated to county status and the town laid off on Hope Dexter's Mittum's Creek tract was incorporated in 1741 (Littleton 1981:2). Located approximately 14 miles upstream from New River Inlet, Johnston was established by the Colonial Assembly in an "Act to lay out a town on or near Mittam's Point on New River by the name of Johnston." The act called for convenient streets, a square for public buildings and confirmed that lots would be available for ten shillings to anyone willing to build a "good substantial habitable framed house" within two years. Town justices were empowered to levy a tax of up to eight pence per year per poll to defray the cost of a courthouse structure. After New River's second courthouse, which had been constructed on Paradise Point, burned in 1744 all county functions were moved to Johnston. However, efforts to construct a new public structure were unsuccessful and sessions were held in private residences until a hurricane destroyed the entire town in September 1752. For five years, court was held at the residence of Jonathan Melton on the northeast branch of New River. Johnston, the first seat of Onslow County government, was never rebuilt.

When the town of Johnston was destroyed in 1752, the population of Onslow County had increased significantly and settlers had pushed well inland along the various branches of New River. As Johnston was no longer considered a suitable and convenient location for the seat of county government, New River settlers pressed for a change in location. A bill to repeal the act that established Johnston as the seat of county government was passed in 1755. That same act designated Wantland's Ferry as the new location for the county courthouse and directed the Onslow justices to erect a new structure complete with pillory, prison and stocks within six months.

In January 1756, James Wantland agreed to provide the Onslow County Magistrate Justices with one acre of land in the vicinity of the ferry landing on his plantation. Wantland's acre was to be convenient to the river and a spring, and would provide a suitable location for the proposed courthouse. Adjacent to the site, the justices were to design a town composed of small lots that would be sold for 20 shillings each. Formal plans for the town continued and in July 1757, the court ordered the Commissioners of Roads "do lay out and make a road from the southwest Bridge to the ferry opposite Wantlands and from Wantlands the nearest best way to the Northeast Bridge and Northwest of each side." Also in that month, rates for the ferry were established: 6 pence for man and horse and 4 pence for a pedestrian and the county treasurer was ordered to pay the ferryman for the passage of jurors and justices from tax revenues (NCDAH 1757).

By 1759, Richard Whitehurst sold the New River lower ferry property to his son-in-law, Robert Snead. Snead operated the ferry on the north side of the river throughout the Colonial period and resided at Ferry Point (Littleton 1981:60). Contemporary land

records [1764] related that the entrepreneur also managed a tavern and ordinary for travelers. Another New River resident was also licensed to operate a tavern near his landing on the south side of the river. John McKinney managed the lower ferry from 1768 until 1770, when the venture was renamed as the Lewis Ferry (Littleton 1981:61). From all accounts, the Colonial period ferries at New River were simple in design and in construction. Snead's primitive vessel was "described as an [sic] 'ordinary bauble' which floated no more than two or three inches above the water" (Littleton 1981:61).

Onslow County's economy during the Colonial period was based primarily on forest products, agriculture and fishing. Naval stores, the extraction of tar, pitch and turpentine from the coastal pine forests, were the region's chief exports. North Carolina placed first among the British colonies in production of this lucrative commodity and Onslow County ranked as high as fourth within the colony. Small farms dominated agricultural settlements during the period because the region's sandy soils and shallow inlets and rivers inhibited the development of a plantation system. Corn and peas constituted the principal consumables, while rice, indigo, flax, cotton, hemp, fruits and other vegetables were harvested on a smaller but significant scale (Louis Berger Group [LBG] 2002:8). An account ledger kept by New River merchant Robert Hogg confirmed that affluence for most Onslow slaveholders was generated from the sale of naval stores, hides and pickled beef and pork (Littleton 1981:65).

Other merchants that owned and/or operated New River interests were Gibbeon Jennings, Edward Ward, Richard Ward, James Howard, Richard Farr, William Gibbs and French & Cray [Joseph French, Jr. and William Cray, Sr.] (Littleton 1981:70-72). When the ship *St. Andrew* arrived at Beaufort in October 1759, the vessel's agent was identified as Richard Farr of New River. According to the *North Carolina Gazette*, Farr exchanged local goods that included tar, deerskins and fur for manufactured goods from London. Shipping records also indicated that the sloop *Cynthia* regularly carried naval stores to Wilmington and Brunswick, and returned to New River with cargoes of "sugar, rum, salt, hardware, and general merchandise" (Littleton 1981:71).

Grist milling constituted another major industry in Onslow County. Mills were in operation in a number of places along the New River basin including French Creek, Wallace's Creek and the area between Stone's Creek and Southwest Creek (Littleton 1981:66). New River residents who owned mills included Christian Heidelberg and William Hadnot. Fishing and whaling provided area residents with supplemental income on a seasonal basis. Several early and mid-eighteenth-century wills probated in Onslow County listed bequests of whale boats and/or whaling gear (Littleton 1981:68). As a consequence of these industries, inspection laws enacted in 1755, 1758 and 1764 named New River Inlet, Bear Inlet and Bogue Inlet as official export locations (Littleton 1981:68).

The reliance on water for transportation and trade prompted sporadic attempts to improve navigation on New River. The Colonial legislature passed some initiatives to artificially deepen the river in 1741, 1760 and 1761. Because the depth of water through Bear Inlet was greater than that at New River Inlet [8 to 11 feet versus 3 to 5 feet] efforts were

directed toward improving navigation from Howard's Bay, near the mouth of New River to Bear Inlet. Advocates of the 1760 legislation desired funding to "allow loaden pettiaguas and other boats of 50 barrels burthen to pass and repass from New River to Bear Inlet." During the following year, three commissioners [who were New River property owners] raised funds to clear and remove rock or shell, and cut through the marsh that fronted New River Inlet (Littleton 1981:69, 70; Watson 1995:17). Overall, those projects were largely unsuccessful and navigation remained problematic for the rest of the eighteenth century and well into the nineteenth century.

The New River area was not impacted, to a large extent, by the activities of the American Revolution. However, many prominent New River landowners and merchants were involved in the political events leading to the war and subsequent military actions. Prior to the Declaration of Independence, two principals of French & Cray, William Cray and Joseph French, joined New River merchants Seth Ward, Edward Ward and Robert Snead to serve on the Onslow Committee of Safety in April 1775. One of the committee's first and primary responsibilities was to enforce the ban on sales of local naval stores to the British (Littleton 1981:102-103). Although Parliament had exempted North Carolina from the Restraining Act of 1775 that prohibited colonial trade with Great Britain and the West Indies, the Continental Congress recognized the significance of the exclusion. The colonies of North Carolina, Georgia and New York were the main producers of naval stores and the Royal Navy needed those commodities. Therefore, the Committee of Safety's ban on selling naval stores to England would strengthen the American cause.

In April 1776, the Fourth Provincial Congress approved plans to raise five independent companies to protect the American seacoast. One company was tasked to patrol the area between Bogue Inlet and New River, while a second unit was assigned to patrol the area south of New River to Deep Inlet. By late November 1776, Captain Selby Harney's Bogue Inlet-New River company was disbanded and that section of the coastline was left unprotected (Littleton 1981:104-105). As the first anniversary of the signing of the Declaration of Independence passed, Onslow justices ordered all suspicious persons and Tories to profess allegiance to the new government. According to court documents, five Tories were arrested at New River and were executed at Kinston (Littleton 1981:105).

In December 1778, the French vessel *Conquerant*, a British prize, entered Little Inlet [located between New River and Brown's Inlets; open to navigation until the late nineteenth century (Littleton 1981:41)] after it separated from the British fleet during a severe storm. After crossing the inlet in a smaller boat, the British disembarked near the mouth of Gillett's [Gillets] Creek to search for rations. Unfortunately for the Royal Navy detachment, New River merchant William Hadnot was present at the site to tend his salt works (Littleton 1981:111). Other New River residents soon assembled and the British seamen were arrested. The disposition of the *Conquerant* and its cargo was later argued at an admiralty court at Bogue [Swansboro] (Littleton 1981:105).

British forces did not seriously threaten the safety of New River residents until 1781 when Wilmington was occupied. The British presence there disrupted travel along the North Carolina coast and enemy troops pillaged the surrounding countryside. In

February 1781, Colonel Mitchell dispatched Onslow soldiers to the lower Cape Fear region to assist American efforts to repel the British. During that same month, North Carolina officials decided to resume coastal defense patrols, and mustered troops to defend the coastline of Onslow County and to fortify the mouth of the White Oak River.

In mid-July 1781, American General Alexander Lillington reported that British forces had sacked the homesteads of several New River Chapel residents but that the enemy had returned to Rutherford's Mill [Northeast Cape Fear]. In August, the British revisited the New River region and occupied the plantation of Lewis Williams (Littleton 1981:107). Locals were then warned that the British intended to destroy all area salt works. The import of salt had been virtually curtailed during the war, and many New River residents had resorted to boiling seawater to obtain that valuable product. For unknown reasons, the Onslow salt works were spared. After Cornwallis surrendered at Yorktown on 19 October 1781, British soldiers evacuated Onslow County and the whole of North Carolina.

Although the courthouse generated a variety of activities at James Wantland's ferry, development after the war was measured. The first structures in the immediate vicinity of the courthouse and ferry were ordinaries established to provide accommodations when court was in session. Ordinaries were also established at convenient points along most of the major roadways in the colony. In July 1784, Bannister Lester was appointed Public Inspector "above the forks of New River, also Courthouse landing and opposite side" (NCDAH 1784). Samuel Simmons was appointed to continue the service as Public Inspector of Naval Stores "at Courthouse Landing" in 1791 (NCDAH 1791). Designating Wantland's Ferry as an inspection port no doubt increased public activity as New River vessels carried out an extensive coastal trade. Other inspection ports were located at Bogue Inlet, Bear Inlet, New River Inlet (1755, 1758 and 1764), Week's Landing [Swansboro], French's Landing [Frenchs Creek] and Todd's Landing (1770) (Littleton 1918:68). An inspection law enacted in 1784 listed numerous exports from the New River region that included "beef, pork, rice, tar, pitch, turpentine, fish, flour, butter, flax seed, staves, heading, sawed lumber, and shingles" (Littleton 1981:111). Within two years, the North Carolina Assembly passed legislation to place Bogue, Bear, and New River Inlets within a new customs district that was named Port Swansborough. At that time, New River merchant Robert Snead was also appointed as a judge for the port's maritime court (Littleton 1981:113).

Swansboro's importance as a shipping center led to the North Carolina legislature designating the town as a state port in 1787. The value of trade entering the port, however, was never very large. Shipping records for the period 1 July 1789 to 10 March 1790 revealed that only 22 sloops and schooners entered the port (Watson 1995:55). Most of this trade was from South Carolina merchants. Exports included naval stores, wood products, tobacco, cotton and foodstuffs such as bacon, pork, chickens, corn, peas and other produce. Area merchants also found markets for natural resources like beeswax, snake root, deerskins and fish. Imports consisted of salt, molasses, rum, dry goods and foodstuff not produced locally. Prior to the War of 1812, merchant Christopher Dudley [or Dudley] conducted a brisk trade based at New River. On 9 March

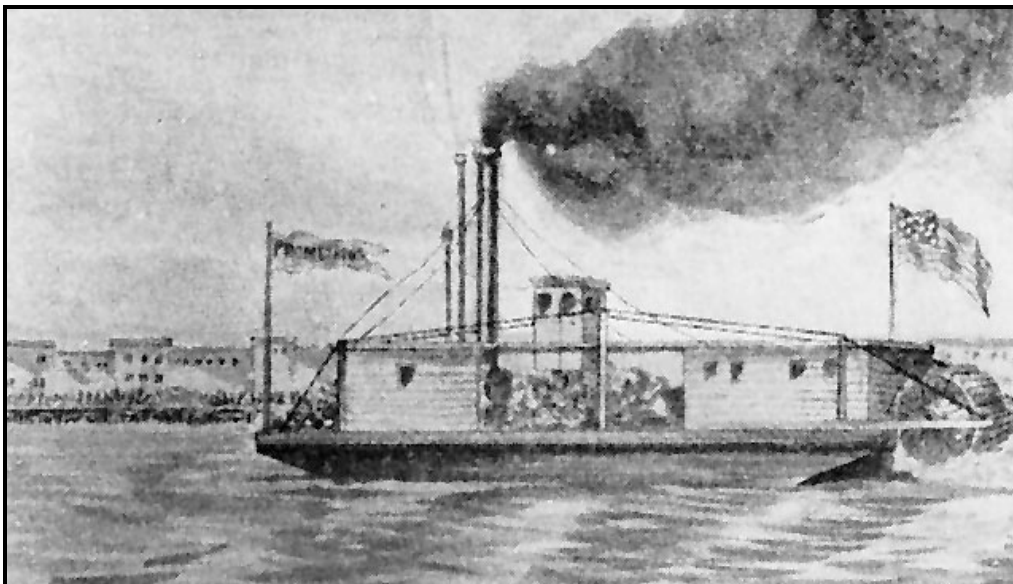
1799, the schooner *Sally* wrecked east of New River bar during a return trip from Charleston. According to historian Wilson Angley, artifacts that included late-eighteenth-century money and merchants' seals were discovered at the wreck-site during the early 1980s (Angley 1982:2).

Prior to 1800, a salt manufacturing facility may have been constructed on an islet later called Wright Island. Documents revealed that William Montfort and three other gentlemen "purchased an unnamed island near the mouth of the New River" during the 1790s. A later reference to Montfort's Landing suggested that the salt works was located at the mouth of New River on the eastern side. A large accumulation of ballast near the west side of the inlet would support the historical site of the Wright Island salt work (Angley 1982:3).

Despite its diversified economy, an out migration of population occurred during the early nineteenth century. This "Great Exodus" resulted in the loss of some of the largest and wealthiest landowners in the county. This move was driven by five factors: land grants for military service in the Revolution and War of 1812, availability of cheap land in the west, better cotton land in the west and south, higher prices elsewhere for hiring slaves and a decline in the productivity of the area's heavily farmed sandy soils (LBG 2002:9). As a result, Onslow County remained rural and was slow to develop, expanding by 1,840 residents in the 40-year period between 1820 and 1860 (Littleton 1981:122).

Although there was sufficient population to warrant establishing a United States post office at Wantland's Ferry in 1814, the town did not develop rapidly. As late as 1821, local newspapers carried advertisements to encourage the sale of lots laid off around the courthouse (*New Bern Sentinel*, 21 April 1821). It was not until two decades later, on 13 December 1842, that the North Carolina General Assembly authorized the town's incorporation and designation as Jacksonville in honor of Andrew Jackson. As the first commissioners of the town of Jacksonville failed to meet the qualifications for that office, the General Assembly dissolved the act of incorporation and passed a second on 27 January 1849 (Onslow County Historical Society 1983).

Although the early growth of Jacksonville was relatively slow, by 1830, large local industries (naval stores, salt works and shipbuilding) had developed along the banks of the New River and Onslow County. Because of its extensive pine forests Onslow County remained fourth in the state in production of naval stores. The value of its forest products



**Figure 4. Illustration of the Swansboro-built steamer *Prometheus* (Watson 1995:51).**

rose from \$16,000 annually in 1820 to approximately \$219,000 by 1850 (Watson 1995:49-50). By the middle of the century, six steam turpentine distilleries and 24 tar and crude turpentine distilleries were in operation in Onslow County.

Shipbuilding factored as another important part of the economy during the nineteenth century. Between the American Revolution and the end of the War of 1812, the county produced 15 schooners, 6 brigantines and 3 ship-rigged vessels (Watson 1995:50). Swansboro shipwrights produced the majority of those vessels. New River builders were limited in the size of their vessels and scope of their operations by the shallowness of the New River bar, which rarely exceeded six feet of water. Construction continued to expand after the wars. Between 1815 and 1861, a total of 35 ocean-going vessels, 32 schooners, 4 brigs and 1 sloop were produced in Onslow County. Of those vessels, 16 were constructed by New River shipwrights. Steam vessels were also built in the area. In 1818, the stern-wheeled *Prometheus*, the first steamer built in the state, was constructed in Swansboro (Watson 1995:50-51). The vessel operated on the Cape Fear River until abandoned in 1825 (Figure 4). In 1836, the 199-ton side-wheel *David W. St. John* was constructed on New River and sold to Georgia interests for operation on the Savannah River.



recorded the hazardous conditions within New River Inlet (Figure 5). In addition, Maffitt described the project area's coastal topography and some shoreline landmarks thus:

New River Inlet is about 44 miles N.E. of Federal Point Light and in Lat. 34°30' 30" N. Long. 77°43'[0"] West. It may be recognized at sea when close up to the bar or in 4 fathoms water by the opening, with hillocks on the Eastern point, and more sloping ones on the West, on which stands a fisherman[']s hut. In front of the opening is an extensive marsh, and to the rear or Northward about two miles, the wide opening of New River with thick woods on either bank can be seen. ... The bar has three feet and eight tenths 3.8 water upon it at ordinary low tides: it is quick sand subject to constant changes in depth and position, hence Sailing Directions have not been verified. In a heavy N.E. Easterly storm the bar has frequently cut out, giving 15 feet at low tide, but in a few days has resumed its mean depth 3.8 (Guthorn 1984:111).

As a result of Maffitt's findings, an 1851 River and Harbor bill appropriated federal funds to resurvey the lower New River. According to a December 1851 edition of the *Wilmington Journal*, surveyors reported that the "sole obstruction which they had found at the mouth of the river was an oyster bed 600 yards long which they believed could be removed by a single engineer, a dredge boat, and two laborers working three months" (Littleton 1981:125). During 1852, the State of North Carolina incorporated two companies that expressed interest in those navigation improvements. Although several influential New River leaders were involved in both firms, no maritime improvements apparently occurred.

In 1855, the state legislature incorporated the New River Navigation Company [the second by that name]. Civil engineer S. Thayer Abert [or Albert] was retained to complete a preliminary survey and within one year, Captain William Weaver reported that a depth of five feet had been obtained at New River Inlet, with an ultimate goal of seven feet (Littleton 1981:125). However, by 1859, the project was abandoned and "the dredge and dumping boats had been laid aside and allowed to sink." Subsequently, the state donated those vessels to the Town of Beaufort (Littleton 1981:125).

In 1856, a dredge was built in Jacksonville to improve and deepen the channels leading to the town. Within two years, Congress declared Jacksonville a port of entry and that act also provided federal assistance to conduct improvements in the New River (*American Advocate*, 28 September 1859). Although a channel that measured 1,975 yards long, 25 to 60 feet wide and 7 seven feet deep was excavated by 1857, the project was considered a failure (Watson 1995:54). Initiatives to construct canals between New River and Brown's Inlet and New River and Swansboro also failed to accomplish their goals.

Further development along New River was disrupted by the American Civil War. After Confederate forces in South Carolina attacked the U.S. garrison at Fort Sumter, President Abraham Lincoln declared a state of open rebellion and called for volunteers to preserve the Union. On 19 April 1861, Lincoln issued a proclamation to establish a blockade of Confederate ports in South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana and Texas. Eight days later, the blockade was extended to include ports in Virginia and



North Carolina. In early May, North Carolina Governor John W. Ellis authorized the sinking of numerous vessels in Bear Inlet to deter Union penetration of that inlet (Littleton 1981:134).

In late September 1861, E. L. Perkins informed Governor Ellis's successor [Henry T. Clark] that New River, Bear and Bogue Inlets "were entirely defenseless and could easily admit vessels drawing 7 or 8 feet of water" (Littleton 1981:134). Union activities soon confirmed that Perkins's fears were well founded. The many salt works scattered along the coastal marshes and livestock grazing on the barrier islands offered easy targets for Union raids. On 17 December, sailors from the Federal barque *Gemsbok* landed near the mouth of the New River along the north banks. After they slaughtered cattle that grazed there, the men crossed New River and were observed on the south side of the inlet. From that position, the Union force boarded a small schooner anchored inside the mouth of the river (Littleton 1981:135).

The Union sorties in October and December 1861 clearly demonstrated the need for Confederate fortifications along the coast. To prevent similar raids, a small six-gun battery was constructed on the south side of Bogue Inlet on Huggins Island. In the interim between Secession and fortification of that island, the Confederate Military and Naval Branch created two departments of coastal defense for the state. The northern division extended from Norfolk, Virginia to New River, while the southern division extended from New River to the border with South Carolina. Despite the obvious military importance of New River Inlet, the modest measures taken to hinder Union strikes along the Onslow coast failed.

The fall of New Bern in March 1862 opened Onslow County to several incursions. In August, Union forces briefly occupied Swansboro on two occasions and on 23 November 1862 Lieutenant William B. Cushing led an expedition against Jacksonville. Although he was only 19 years old, Cushing had recently taken charge of the USS *Ellis* due to his valor at the Battle of Blackwater River (Schneller 2004:44-45). The *Ellis* was stationed in the vicinity of Bogue Inlet to "intercept any Rebel trade" at Beaufort. However, tiring of the lack of activity near Bogue Cushing ordered the *Ellis* to New Topsail Inlet without first seeking authorization. At New Topsail, the *Ellis* seized the schooner *Adelaide*, loaded with 600 barrels of turpentine, 36 bales of cotton and some tobacco for Bermuda (Schneller 2004:46). Though chastised by superiors for leaving his station, Cushing's conduct during the *Adelaide* affair and his subsequent destruction of a large salt works near Topsail Inlet on 29 October 1862 led to a grant of carte blanche or a "roving commission" by Commander Henry Davenport, the senior naval officer in the North Carolina sounds (Schneller 2004:47).

Encouraged by the award of such an unusual directive, the *Ellis*'s commander turned his attention to a raid on Jacksonville. On 23 November, Cushing steamed into New River Inlet and proceeded to head 35 miles upriver to the county seat. His stated mission was "to sweep the river, capture any vessels there, capture the town of Jacksonville, or Onslow County Courthouse, take the Wilmington mail, and destroy any salt works that I might find on the banks" (The National Historical Society [TNHS] 1987 I, 8:230-231).

At a point five miles above the mouth of New River, the *Ellis* encountered an outbound vessel, loaded with turpentine and cotton, that had been fired to prevent capture by Federal forces. By early afternoon, he reached Jacksonville, positioned pickets and placed guards at all the public buildings. Within only 90 minutes, Cushing's naval unit captured 25 public weapons, a large quantity of mail, two schooners and slaves that belonged to the Confederate postmaster.

On returning down river, the *Ellis* paused briefly to shell an unidentified encampment on the banks. The gunboat was forced to stop again near the mouth of New River to silence rifles from the still burning schooner that had been encountered earlier in the day. At dusk, the *Ellis* anchored approximately 5 miles from the outer bar with its prizes to await the rising tide. At daylight, the vessel came under fire from Confederate artillery and during the ensuing exchange of gunfire the *Ellis* grounded hard on a shoal. Unable to free his ship and concerned by a possible attack, Cushing transferred everything "excepting the pivot gun, some ammunition, 2 tons of coal and a few small arms" aboard one of the prize schooners and order his men, except for six volunteers, to "drop down the channel out of range from the bluffs, and...to wait for the termination of the impending engagement (TNHS 1987 I, 8:231-232). On the following morning, Confederate forces opened fire on the *Ellis* with heavy rifled guns significantly damaging the vessel's engine and hull. Unable to save his ship, Cushing ordered the *Ellis* fired and his unit retreated downriver in surfboats to the awaiting prize ships.

In 1864, Union forces conducted additional forays into coastal Onslow County. In March of that year, an expedition by 200 soldiers and 45 sailors from the USS *Britannia* and several smaller vessels was repulsed by Confederate fire at Swansboro while a smaller raid at Bear Creek resulted in the destruction of a schooner and the capture of a large number of slaves.

During early summer 1864, a joint Union army and navy expedition attempted to disrupt operations of the Wilmington and Weldon Railroad [W&WR]. Weldon was one of the chief railroad centers in the state and a vital military connection. On 20 June, the steamers USS *Calypso* and USS *Nansemond* departed from Beaufort and landed detachments from the Ninth Vermont Volunteers near New River to meet and cooperate with an inland army force (TNHS 1987 I, 10:169). Approximately 100 men were carried aboard four surfboats up the river near Swan Point, where they disembarked under the cover of darkness. Under the command of Captain Kelley, the "Volunteers" took possession of Snead's Ferry and captured a number of the Confederate pickets (TNHS 1987 I, 10:170-171). However, on the following day, boats resupplying the detachment came under Confederate fire from Swan Point. Fearing that the point had been fortified with artillery Kelley's unit was evacuated. Unbeknownst to Union strategists, Confederate forces had received intelligence regarding the proposed sortie and had fortified the railroad. After being apprised of the armed guards, the Federals abandoned the attack, recalling the two steamers back to Beaufort via Bogue Inlet (TNHS 1987 I, 10:169).

Though Onslow County was not a major blockade running center during the war, a number of vessels sought refuge along the coast to escape capture. The Union navy realized the potential for clandestine trade along that corridor and often inspected the lower sounds of North Carolina. On 16 December 1863, a schooner was observed at the entrance of Bear Inlet by the USS *Mount Vernon* and the USS *New Berne*. The *Mount Vernon* anchored at the center of Bear Inlet and lowered boats for boarding the vessel. Acting Master E. W. White reported that, “had scuttled and set fire to the *G. O. Bigelow*, her crew having run her aground and abandoned her a few minutes before they got aboard” (TNHS 1987 I, 9:344, 780).

On Christmas Eve, the USS *Daylight* and the USS *Howquah* left Beaufort to confiscate a large supply of salt that had been landed by the *G. O. Bigelow* and a cargo of naval stores that was ready for shipment prior to that vessel’s destruction by the *Mount Vernon*. Though no naval stores were found three [or four] salt works, 150 sacks of salt and a large number of empty barrels for turpentine were destroyed by the expedition (TNHS 1987 I, 9:375-376).

In February 1864, the 750-ton *Nutfield* was stranded and burned at New River Inlet while running the blockade. Although the precise location of the shipwreck was not identified, an 1882 U.S. Army Corps of Engineers (USACE) report mentioned “the wreck of an old blockade runner” on the “eastern side of the inlet” (Anglely 1982:4). In June of that year, another blockade runner, the *Pevensey*, was chased ashore on Bogue Banks while enroute to Wilmington.

Onslow County, like many other areas in the south, was slow to recover from the economic and social impacts of the war. One response to the economic collapse that followed the war manifested itself through numerous public meetings. These gatherings were organized in Jacksonville to identify improvements that would encourage commerce along New River. As early as 1869, plans were formulated to secure a steamboat that would operate between Jacksonville and Wilmington. Proponents suggested that the vessel would be built in Delaware and commanded by Captain John N. Maffitt, the celebrated Confederate naval officer from Wilmington, North Carolina (*Morning Star* [MS] 11 June 1869).

Unfortunately for residents and commercial interests in Onslow County that maritime venture did not materialize. A lack of navigable channels may have been one chief obstacle. In 1875, a federal civil engineer reported about impediments to navigation in southeastern North Carolina that included the New River Inlet area. S. T. Albert noted that:

Between Bogue Sound and Wilmington are five shallow sounds, with an occasional inlet, where coasters may find haven. These sounds...are for the most part occupied by an intricate network of channels through which a canoe cannot pass. The storms sweep into the sounds a large amount of sand which the feeble backwater is unable to remove, and large deltas have been formed by the ocean inside the inlets...Local testimony seems to indicate that the beach is washing away between New River and Masonborough, and some residents affirm that the

beach has retreated as much as one-eighth of a mile in the last twenty years (Anglely 1984:7).

Circa 1882, only seven schooners reportedly traded between markets at New River and Wilmington. Those coastwise vessels carried annual cargoes that totaled 20,000 barrels of naval stores and 1,500 bales of cotton plus shipments of peanuts, oysters, and fish. During the following year, a steamer commenced service between New River and nearby Morehead City (Anglely 1982:4). At the same time, Onslow County's economic growth was also being fostered by an overall expansion of seafood industries. Trout and mullet were caught locally in great numbers and quickly developed into an important export commodity (*MS* 20 January 1878). Like the region's trout and mullet, New River oysters became popular as far away as New York and were exhibited in Boston during the Boston Exposition in 1883 (*Weekly Star* [*WS*] 28 September 1883). The New River Oyster Company was formed in 1890 to continue to foster development of the oyster industry in Onslow County (*WS* 21 November 1890).

The General Assembly incorporated the Eastern Carolina Piscatorial Association to promote the region's coastal resources during that same year (Watson 1995:90; *WS* 2 September 1892). Residents of Jacksonville and Onslow County also began to express considerable interest in agricultural development. Cotton rapidly became the county's principal crop, but as the sandy soils became depleted by the turn of the twentieth century area farmers switched to tobacco. A series of popular local agricultural societies were organized to promote development of the cash crop. The Onslow County Agricultural Society was formed for that purpose in Jacksonville during September 1872.

Formation of the agricultural and piscatorial societies corresponded with the arrival of the Wilmington, Onslow and East Carolina Railroad in December 1890. The railroad brought an influx of people into Jacksonville and more than 50 houses and a variety of new stores were reported under construction the following year (*WS* 9 January 1891). The railroad also provided long sought steamboat services for Jacksonville. The Onslow County Railroad Company initiated operations with the steamboat *Louise* in 1890 and placed the *George D. Purdy* in service in June 1894 (*Daily Review* 26 March 1890). The *George D. Purdy* was later purchased and operated by the East Carolina Piscatorial Association (*WS* 17 September 1897). Due to the popularity of local steamship and rail services, schooners all but disappeared by 1905 (Anglely 1982:4).

Rail and steamer connections contributed to a revival of the lumber industry in the 1890s and a variety of mills were constructed in and around Jacksonville. The Onslow Lumber Company of Jacksonville made its first shipment of wood to Wilmington in August 1891 (*WS* 6 August 1891). In 1912, two additional mills were built near Jacksonville (*MS* 27 September 1912, 20 July 1919). Two years later a fourth mill was established and Jacksonville mills turned out several thousand dollars worth of cut lumber each week (*MS* 27 January 1914). While most of the lumber produced in Jacksonville was shipped to Atlantic coast ports, a small amount was used to support local shipbuilding.

The naval stores industry, on the other hand, experienced a sharp decline during post war years. The volume of production dropped dramatically from a value of nearly \$400,000

just before the war to \$38,700 in 1870 (Watson 1995:89). This decline in production lowered Onslow County's rank from fourth to eleventh in the state. Though the number of distilleries doubled between 1870 and 1880 production remained low and by the second decade of the twentieth century, the industry had all but disappeared.

An 1882 federal navigation report described the dynamic condition of New River Inlet during the last quarter of the nineteenth century. Engineer John P. Darling stated:

The bar outside the inlet is constantly changing, the sand drifting during heavy winds. At the time of the examination the channel was on the west side of the breakers in front of the inlet, but was changing to the east near the wreck of an old blockade runner where the channel used to be a few years ago, as I am informed.... The inlet from the shore on the west to the long sand bar or beach on the east is 500 feet in width.... There is about 5 feet of water on the bar at ordinary low-tides...Five of water can be carried from the inlet to the lower end of the oyster rocks, 7,000 feet, the same depth prevails in the channel, but it is only 50 feet in width, and very crooked, it having been cut so (I [Darling] think by the state) to avoid the worst rocks, they being visible on both sides at low water (Anglely 1982:5).

As a consequence of Darling's findings, the USACE implemented a dredging project in 1886 when a cut was made through Cedar Bush Marsh and through Wright's Island. The first cut quickly deteriorated and was abandoned in 1894, but more work continued on the lower part of what is now call Western Channel to secure a four-foot deep channel. By 1905, an oyster shell dike was constructed at Western Channel and that construction helped to secure and maintain the 4-foot depth at low water (Anglely 1982:5). Prior to 1900, dredges also extended a navigable channel [Swansboro to Beaufort] that had been constructed in 1880 to a point beyond the lower New River shoals (*WS* 21 November 1890).

New River boat building continued as a modest industry during the early decades of the twentieth century. The majority of that production focused on small vessels. By the turn of the century, gasoline began to replace steam powered vessels and construction turned away from commercial to fishing and pleasure craft. Local shipyards were located near Sneads Ferry and Marines on the New River. New River builders were known for a long-bowed skiff, specifically small boats rigged like skipjacks (Watson 1995:118). Despite the existence of New River shipyards, a 1916 report indicated that "no commerce whatever passed through the inlet [New River] to the sea" (Anglely 1982:4).

Navigational improvements made during the twentieth century brought many changes to Onslow County. During the 1920s, construction began on the Intracoastal Waterway, a protected waterway traversing the entire eastern seaboard of the United States. It was hoped that the waterway would facilitate coastal trade and open areas of the coast that had little access to transportation outlets. Prior to 1930, Beaufort remained the southern terminus of the Intracoastal Waterway. To the south of that North Carolina port, the waterway resumed at Winyah Bay, South Carolina. Federal legislation enacted during the late 1920s approved construction of a 93-mile long waterway between the port cities

of Beaufort and Wilmington. The projected waterway was expected to increase shipments of “large quantities of lumber, seafood, fertilizer, petroleum products, and general merchandise through the intervening sounds” (Anglely 1984:8). The segment that eventually passed through Onslow County was 12-feet deep and 90 feet wide. In 1938, six years after being completed, approximately 8,500 motor vessels, 200 barges and 300 tugs were crossing Onslow’s waters within the Intracoastal Waterway (Anglely 1984:8; Watson 1995:117).

Overall, Onslow County was still rural in nature and did not contain any significantly populated towns until the 1950s. The economy was based on the same industries as the previous century, agriculture, lumbering and fishing. The naval stores industry had all but disappeared by World War I. Small farms dedicated to tobacco production dominated the countryside. Other important commodities included corn, cotton, sweet potatoes, peanuts, peas, hay, apples and peaches (Watson 1995:112). During Reconstruction, tenancy became the principal method of farming. By 1940, 41 per cent of Onslow County’s farms still operated by that method (LBG 2002:13). The seafood industry remained steady. Prior to World War II, there were some 25 trawlers in the county and many were locally constructed (Still 1983).

The county’s transportation networks were expanded and modernized during this period. Though water remained the principal method of transportation a number of new and paved roads began to appear in the county, spurred by the introduction of the automobile. In 1924, Route 17 crossed through the county following the old Colonial Post Road and in 1934, Route 24 was completed. The railroads also expanded during this period. However, most catered to the lumber industry and were short in length, transporting timber directly to the mills for processing. Many of the lines could not compete against the expanding road system and were eventually discontinued.

Onslow County underwent a protracted economic decline at the close of World War I. Farm prices collapsed with the recovery of Europe and the removal of stimulus packages to aid the war effort. As a result, when the stock market crashed and the Great Depression came their overall impact was minimal. In 1933, the North Carolina Emergency Relief Administration provided Onslow County with some relief in the form of public works and farm relief. The Work Projects Administration [WPA] also assisted to provide local employment opportunities. One WPA project sponsored the construction of a Community Club House on the waterfront in Jacksonville.

Economic conditions improved slowly until World War II when the area was selected as the site for Camp Lejeune, the largest marine training facility in the United States. The New River site was selected by the military for its location, isolation and geography. Though the federal government made patriotic appeals for residents to sell their land, most refused and their land was acquired by condemnation. As a consequence, approximately 720 families were left homeless and destitute (Watson 1995:135). The U.S. military eventually received title to 173.8 square miles of land fronting both sides of

New River (Littleton 1981:169). This acreage would expand to over 246 square miles with the addition of New River Marine Corps Air Station, Camp Geiger and other support facilities.

During World War II, at least 12 American tankers and freighters were sunk in Onslow Bay as a consequence of being torpedoed by German U-boats. The majority of those commercial vessels were lost during March and April 1942. Conversely, the 218-foot *U-352* was destroyed in the bay after being depth-charged by the USCG cutter *Icarus* (Gentile 1992:193-209; Survivor Topsail 2005). After the global conflict ended, the establishment of the Marine Corps base at nearby Jacksonville began to stimulate commercial development in Jacksonville and Onslow County.

Because of the proximity of the marine base, the City of Jacksonville has developed into the largest commercial center in Onslow County. The area is home to active duty marines and their dependents, civil service employees, civilian employees and many civilian and military retirees. Expansion of the Camp Lejeune Marine Corps training facility provided unprecedented support for Jacksonville and fostered growth that continues today. By 2001, Jacksonville's population has grown from 3,960 in the 1950s to more than 70,000 (Murrell and Murrell 2001:73).

The nature of activities along New River has changed due to improved inland transportation and other factors. New River boat-building enterprises declined by the mid-twentieth century, but some smaller yards like the Matthews Brothers Nethouse continued operations (LBG 2002:13). Today, private leisure and charter vessels transport "May parties" and "banks parties" up and down the river. According to sociologist John Maiolo, a substantial channel-net fishery has also developed in the New River at Snead's Ferry during the last several years. His research on the North Carolina shrimping industry indicated that 50 to 60 vessels operate between New River and Swansboro and between New River and Topsail Beach (Maiolo 2004:41-42).

## **Previous Investigations**

In May 1978, the fragmentary remains of a vessel (002 NWI) were found on West Onslow Beach. The wreck was reported to the Division of Archives and History by Keith Worth of Fayetteville. Leslie Bright of the UAU visited the site and examined the wreck with U.S. Marine Corps personnel on 21 May and identified the structure as a section of the hull of a small coasting vessel such as a schooner. The wreckage was located on the beach approximately 1/4 mile north of New River Inlet. Because the structure was considered to be a representative example of nineteenth-century vessel construction, it was removed from the beach and delivered to Fort Fisher by U.S. Marines (Bright 1978).

In August 1978, the remains of another small vessel (001 NWI) were reported to the UAU by Max Hill of High Point, North Carolina. Ballast, cultural material and wood fragments were previously observed at the site in 1970 by Paul Miller of Milton,

Wisconsin (Paul Miller to Richard Lawrence, personal communication 27 September 1994.). A one-day reconnaissance of the wreck site was conducted by Gordon Watts, Richard Lawrence, Dina Hill and members of the Fort Fisher staff on 18 August 1978. The wreck was located on the south side of the channel directly across from a black can buoy. Examination of the exposed remains indicated that the surviving structure was associated with a small nineteenth-century vessel. Only a small fragment of deck structure approximately 3 feet in width and 12 feet in length was documented. The fragment included 2- and 3-inch-thick planks, beams, a hanging knee and possibly a fragment of a breast hook. The area around the section of deck was littered with ballast stones, shingle and scattered fragments of glass and ceramic material that suggested an antebellum date (UAU n.d.).

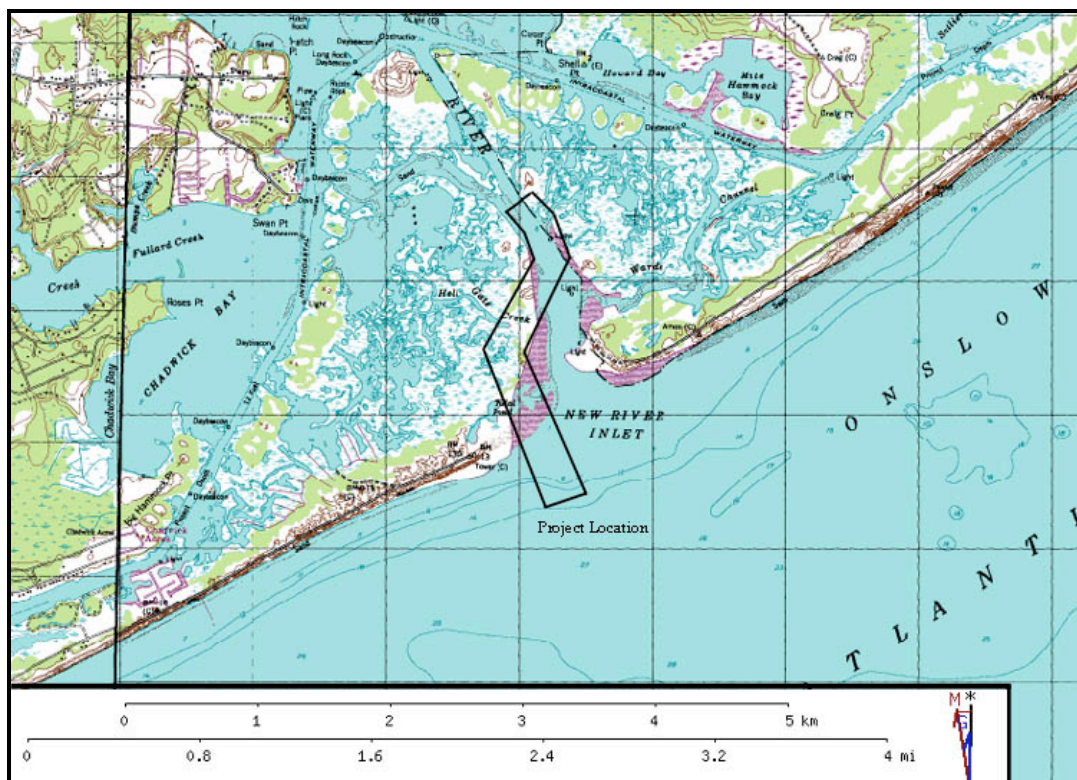
The 001 NWI site was re-examined in August 1982 by Mark Wilde-Ramsing and Ms. Hill of the UAU. Wilde-Ramsing and Hill confirmed that the site was the same as previously examined in 1978 and that there was ballast scatter and exposed vessel structure located on the south side of the channel directly across from a black can buoy. A site sketch placed the hull remains immediately west of a grove of live oaks. The exposed hull remains measured approximately 75 feet in length and 17 feet in beam (Wilde-Ramsing 1982). Although rising tide prevented a detailed examination, Wilde-Ramsing concluded the structure consisted of the lower hull of a small sailing vessel (Wilde-Ramsing 1982).

In 1982, a second wreck (003 NWI) was documented in the immediate vicinity of New River Inlet. That site was investigated by staff and students from East Carolina University's Program in Maritime History and Underwater Research (*Daily News*, 20 August 1982). Responding to a report of the exposed wreck provided by Swansboro historian Tucker Littleton, a two-day reconnaissance of the wreck site was carried on 18 and 19 August 1982. Examination of the exposed remains confirmed that the vessel was a small late-nineteenth-century schooner. Little of the hull above the turn of the bilge survived and the bilge was filled with ballast stones and scattered with fragments of glass and ceramic material. The keel measured 56 feet and the maximum surviving beam measured 18 feet.

A remote-sensing survey of the oceanfront along West Onslow Beach was carried out in 1997 by the UAU and the Institute for International Maritime Research. The survey was designed to locate the remains of the Civil War blockade runner *Nutfield*. That British steamer was reported to have stranded and been destroyed in the immediate vicinity of New River Inlet in February 1864. The survey covered the inshore area between the shoals north of New River Inlet and the West Onslow Beach pier. No evidence of the *Nutfield* was identified during the investigation (Watts, personal communication 2005).

The most recent survey was carried out by TAR for CPE in October and November of 2004. CPE was working with the Town of North Topsail Beach officials on a project to realign the navigation channel for the lower portions of New River and New River Inlet (Figure 6). The TAR survey was designed to locate and identify submerged cultural



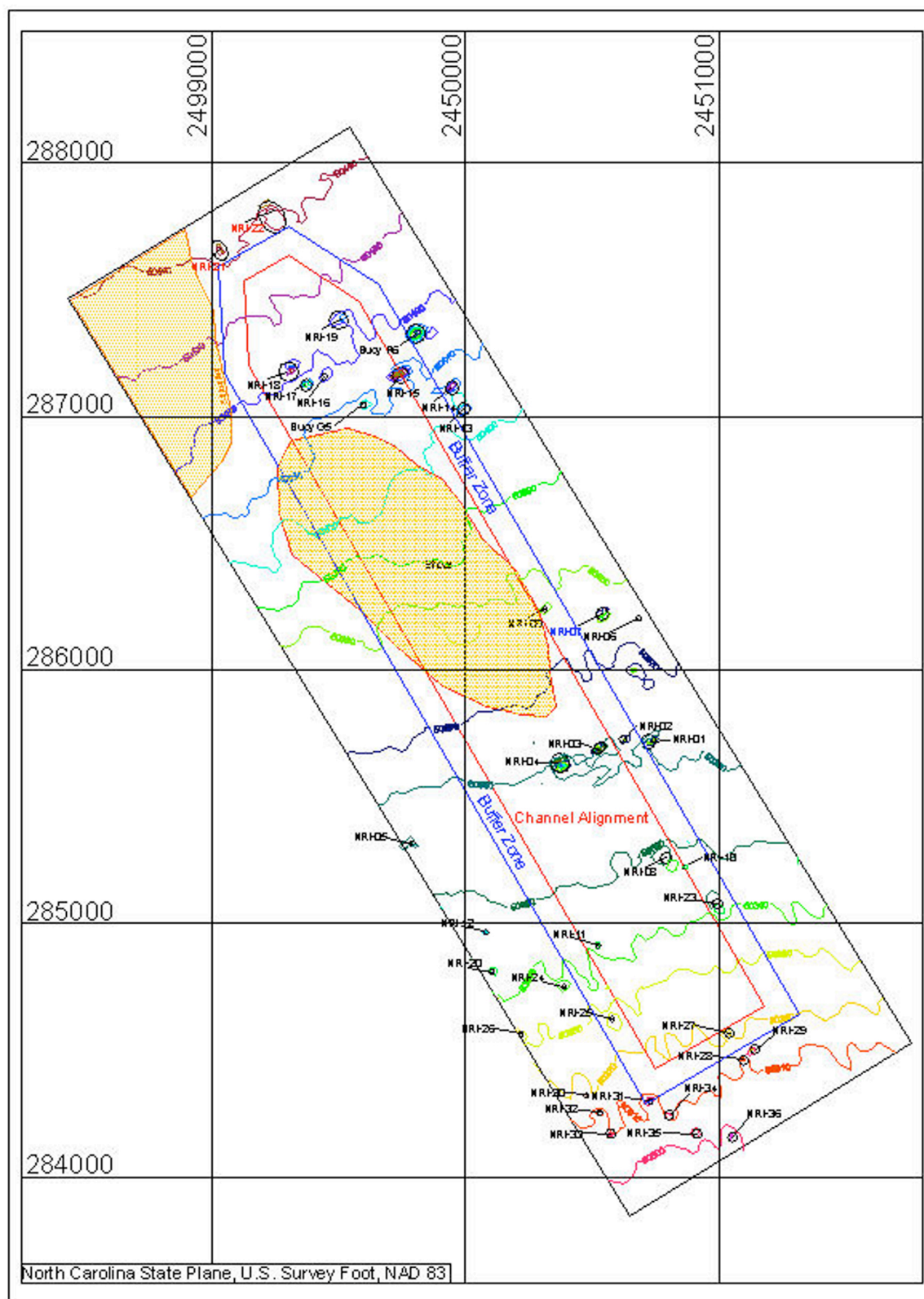


**Figure 6. TAR 2004 New River Project location map (7.5" USGS, New River Inlet, NC, 1997).**

resources in the study area and generate sufficient data to make an initial assessment of each target's significance and provide insight into the necessity for avoidance. Analysis of the remote-sensing data revealed a total of 111 magnetic and/or acoustic anomalies. Of those, 29 were identified as having moderate or high potential association with shipwreck material and/or other submerged cultural resources. In addition, 14 of the 29 lie within four discrete clusters and may be associated with previously documented wrecks or cultural material observed along the western bank of New River. Fifteen additional targets were also found to contain signature characteristics consistent with potentially significant cultural resources. The remaining 82 targets reliably appeared to have been generated by single and/or clusters of ferrous objects such as small diameter iron rods, chain, cable, pipes, small boat anchors, traps or other modern debris (TAR 2005). A portion of the 2004 data collected in New River Inlet was used to support the current investigation.

## Description of Findings

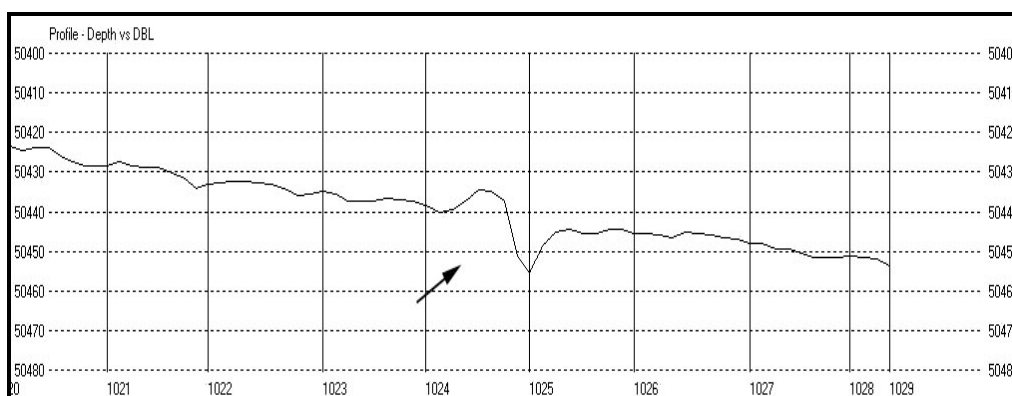
The remote-sensing survey of New River Inlet identified a total of 36 magnetic anomalies (Figure 7). Of those, 10 are located within the proposed channel realignment and 5 lie within a 100-foot buffer. Analysis of the magnetic anomalies indicates that two of the



**Figure 7. New River Inlet survey area magnetic contour map showing anomaly locations, the proposed channel alignment and a 100-foot buffer.**

anomalies, NRI-21 and NRI-22, should be considered to have a high potential for association with historically significant submerged cultural resources. A third anomaly, NRI-07, should be considered to have a moderate potential for association with historically significant submerged cultural resources. Material generating the remaining signatures appears to have low potential for association with historically significant submerged cultural resources. Those anomalies appear to represent small ferrous objects such as small diameter iron rods, chain, cable, pipes, small boat anchors, traps or other modern debris (Appendix B). None of the signatures have characteristics that suggest an association with historically significant submerged cultural resources. High and moderate anomaly signature characteristics and location data are as follows:

### High Priority Anomalies



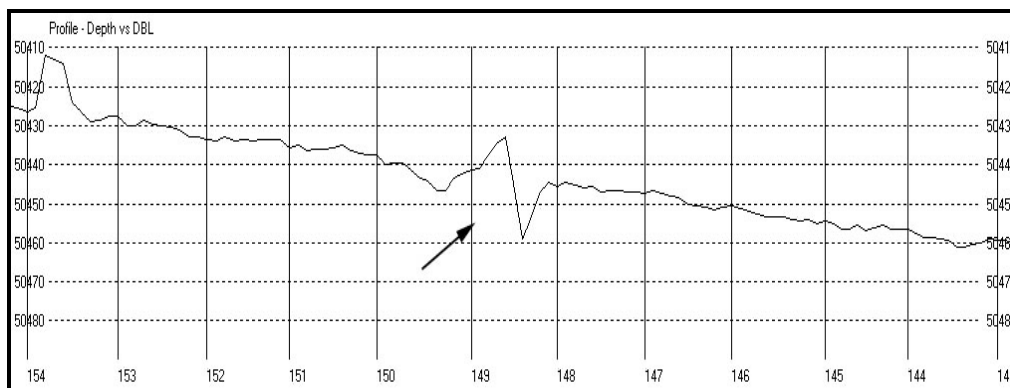
**Figure 8. Magnetic target NRI-21.**

Target Designation	Easting	Northing	Gammas	Duration
NRI-21	2499031.7	287663.6	21	97

Target NRI-21 was located on lane 1 on the edge of the survey area. The detectable signature had a maximum intensity of 21 gammas and a maximum duration of 8 seconds over a distance of 97 feet (Figure 8). The contoured signature covered an area of at least 2,200 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-21 were developed from the following lane specific data:

1c-d21g8s97f	2499031.7	287663.6
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**Figure 9. Magnetic target NRI-22.**

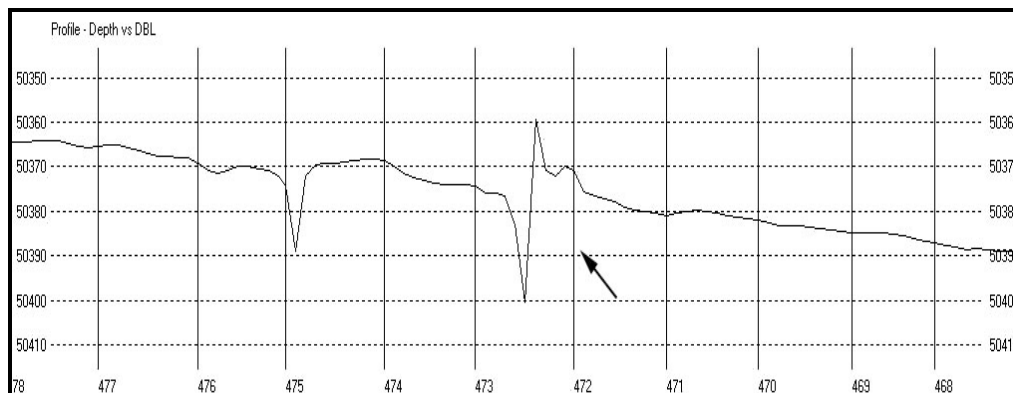
Target Designation	Easting	Northing	Gammas	Duration
NRI-22	2499240.3	287810.3	26	164

Target NRI-22 was located on lane 6. The detectable signature had a maximum intensity of 26 gammas and a maximum duration of 16 seconds over a distance of 164 feet (Figure 9). The contoured signature covered an area of approximately 12,100 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small ordnance, chain, small boat anchor or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-22 were developed from the following lane specific data:

6e-d26g16s164f	2499240.3	287810.3
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## Moderate Priority



**Figure 10. Magnetic target NRI-07.**

Target Designation	Easting	Northing	Gammas	Duration
<b>NRI-07</b>	2500543.8	286225.7	41	126

Target NRI-07 was located on lane 7 on the New River Inlet bar. The detectable signature had a maximum intensity of 41 gammas and a maximum duration of 12 seconds over a distance of 126 feet (Figure 10). The contoured signature covered an area of at least 2,900 square feet. No sonar signature was associated with the material generating the magnetic signature. While the signature characteristics suggest a single object of low ferrous mass such as small diameter iron rod, chain, small boat anchor, ordnance or other debris, material generating the anomaly could also be associated with the remains of a small vessel. Unless the anomaly can be reliably avoided, additional investigation to identify and assess the material generating the signature is recommended.

Signature characteristics of target NRI-07 were developed from the following lane specific data:

12f-d41g12s126f	2500543.8	286225.7
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## Conclusions and Recommendations

A survey of historical and archaeological literature and background research confirmed evidence of sustained maritime activity associated with the New River Inlet area. Documented transportation activities in the vicinity of New River Inlet and neighboring waterways date from the second half of the sixteenth century. New River became a focus for European activities as early as 1524 when the Italian navigator and explorer Giovanni da Verrazano dispatched a small group to meet Indians somewhere between New River Inlet and Bogue Inlet. Settlement along the banks of New River began during the second decade of the eighteenth century.

Though positioned along the main road between New Bern and Wilmington Onslow County grew very slowly. The region's poor soils retarded agricultural development and the shallowness of New River Inlet bar hindered navigation and trade. New River became a small shipbuilding center during the late eighteenth to early nineteenth century but the shallow bar limited construction to shallow draft coastal vessels. The region remained a relative backwater until the establishment of Camp Lejeune during World War II. The presence of the marine base, which straddles both sides of New River, has limited development along the river and immediate coast and may, as a result, increased the potential for shipwrecks and other submerged cultural resources in the project area.

As a consequence of nearly 400 years of navigation in the coastal region of New River Inlet and settlement along the banks of New River since the eighteenth century, there is a high probability that historically significant submerged cultural resources are located in the current project area. While no shipwrecks in the project vicinity have been listed on the *NRHP*, historical sources document that they exist; there are at least 25 shipwrecks recorded in the coastal waters off New River Inlet (Appendix A). Because of their association with the broad patterns of North Carolina and New River's history, the remains of sunken vessels preserve important information about the maritime heritage of the North Carolina coast. The files of the UAU list two known sites in the vicinity of the survey area: 001/003NWI and 002NWI. Both were identified as the remains of small nineteenth-century sailing vessels lost in New River inside the bar.

Analysis of the remote-sensing data revealed a total of 36 magnetic anomalies. Of those, 10 are located within the proposed channel realignment and 5 lie within a 100-foot buffer. Sonar data identified no acoustic anomalies and confirmed that none of the material generating the magnetic signatures was exposed on the bottom surface. Analysis of the magnetic anomalies indicates that 2 of those targets (NRI-21 and NRI-22) have a high potential association with shipwreck material and/or other historically significant submerged cultural resources. Because those anomalies lie outside the area of potential impact, no additional investigation is recommended in conjunction with the proposed project. Signature characteristics associated with target NRI-07 suggest that material generating the anomaly has a moderate potential association with shipwreck material and/or other historically significant submerged cultural resources. Because that anomaly also lies outside the area of potential impact, no additional investigation is recommended

in conjunction with the proposed project. All of the remaining anomalies have signature characteristics that are representative of small single ferrous objects such as small diameter iron rods, chain, cable, pipes, small boat anchors, traps or other modern debris.. None of the signatures have characteristics that suggest an association with historically significant submerged cultural resources.

In light of the findings, the proposed channel realignment dredging will not impact any historically significant submerged cultural resources. No additional investigation of the project area is recommended in conjunction with the proposed project. Based on results of the 2004 and 2007 New River Inlet remote-sensing surveys, no *NRHP* eligible submerged cultural resources will be impacted by dredging associated with realignment of the New River Inlet navigation channel.

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## Appendix A

### Known Shipwrecks Located in the Vicinity of New River Inlet, North Carolina

Name	Type	Tons	Built	Date Lost	Cause & Location
Unknown	Unknown			July 1737	Sank near mouth of New River
<i>Sarah</i>	Sloop			December 1747	Bear Inlet
Unknown	Sloop			July 1752	Bear Inlet
<i>Henrietta</i>	Sloop			December 1764	Bear Inlet
Unknown	Schooner			April 1765	Below Bear Inlet
Unknown	Sloop			December 1765	Near New River
<i>Sally</i>	Schooner			March 1799	East side of New River Bar
<i>Seaman</i>	Schooner			March 1837	Cast away at New River Inlet
Unknown	Schooner			September 1815	Mouth of New River
<i>Pulaski</i>	Side Wheel Steamer	687	1837	June 1838	Exploded at New River Inlet
<i>Marchioness of Bute</i>	Ship			January 1853	Near Bear Inlet
<i>Albion</i>	Schooner			March 1858	Inside New River Bar
Multiple Unknown	Unknown			September 1861	Scuttled by state at Bear Inlet to protect from Union vessels
USS <i>Ellis</i>	Side wheel Steamer	100		November 1862	Burned near mouth of New River. Salvaged October 1867
<i>Nutfield</i>	Side Wheel Steamer	750 (450)	1862	February 1864	Burned at New River Inlet
Unknown	Schooner			March 1864	Burned at Bear Creek by Union forces
<i>G.O. Bigelow</i>	Schooner	90		December 1864	Destroyed at Bear Inlet by Union forces
Unknown*	Unknown			1880	Stranded at mouth of New River
<i>Lorenzo</i>	Schooner			August 1880	New River Bar
Unknown	Unknown			1881	Stranded at mouth of New River
Unknown	Unknown			1884	Stranded at mouth of New River
Unknown	Unknown			1890	Stranded at Bear Inlet
Unknown	Unknown			1890	Stranded at New River Inlet

Unknown	Unknown			1894	Stranded at New River Inlet
<i>Morris and Cliff</i>	Schooner	132	1890	January 1926	Lost approximately one mile west of Brown's Inlet

**\*According to Littleton (1981), this unknown vessel could have been the schooner *Lorenzo* lost August 1880.**

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## Appendix B

### New River Inlet Survey Area Target List

Target	Lane	Description	X-Coordinate	Y-Coordinate	Sonar	Priority/Recommendation
NRI-01	10	10d-d45g5s60f	2500730.7	285718.6	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. Out of Area. No additional investigation.
NRI-02	8	8f-p20g5s65f	2500611	285722.5	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation.
NRI-03	6	6g-d72g5s55f	2500518.6	285679.5	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-04	3	3a-d103g7s89f	2500376.9	285627.1	No	Low, signature suggestive of wire rope, cable, pipe or other modern debris. No additional investigation
NRI-05	26	26-1-dp12g91f	2499797.4	285314.1	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. Out of Area. No additional investigation
NRI-06	14	14c-n6g7s80f	2500679.6	286203.1	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. Out of Area. No additional investigation
NRI-07	12	12f-d41g12s126f	2500543.8	286225.7	No	<b>Moderate, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Out of Area. No additional investigation</b>
NRI-08	10	10-1-dp14g85f	2500792.7	285252.3	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. Out of Area. No additional investigation

NRI-09	8	8e-d18g8s77f	2500311.2	286241.6	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-10	9	9-1-dp9g108f	2500866.0	285226.3	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-11	18	18-1-dp7g56f	2500522.1	284913.7	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-12	25	25-1-dp20g68f	2500079.4	284324.4	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-13	11	11d-p21g5s66f	2499993.9	287031.1	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-14	11	11e-p47g5s69f	2499938.7	287108.1	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-15	8	8d-d75g6s65f	2499748.8	287171.4	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-16	3	3b-p12g5s58f	2499445.4	287155.3	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-17	1	1a-n38g6s58f	2499363.4	287118.7	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-18	1	1b-p22g6s68f	2499289.2	287172.2	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation

NRI-19	6, 7	6f-n14g5s52f 7c-n17g4s55f	2499491.1 2499514.1	287377 287385.7	No	Low, signature suggestive of a cluster of small objects such as small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-20	26	26-2-dp4g75f	2500108.0	284811.7	No	Low, signature suggestive of a cluster of small objects such as small diameter pipe, trap, anchor or other small modern debris. No additional investigation
<b>NRI-21</b>	<b>1</b>	<b>1c-d21g8s97f</b>	<b>2499031.7</b>	<b>287663.6</b>	<b>No</b>	<b>High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Additional investigation</b>
<b>NRI-22</b>	<b>6</b>	<b>6e-d26g16s164f</b>	<b>2499240.3</b>	<b>287810.3</b>	<b>No</b>	<b>High, signature characteristics, intensity and duration, suggest suggests that material generating the anomaly could be associated with the remains of a vessel. Additional investigation</b>
NRI-23	8	8-2-dp10g95f	2500932.1	285070.4	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-24	22	22-2-dp8g52f	2500386,6	284754.6	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-25	20	20-2b-dp6g23f	2500576,8	284625.4	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-26	27	27-1-dp14g87f	2500215.7	284565.0	No	Low, signature suggestive of a cluster of small objects such as small diameter pipe, trap, anchor or other small modern debris. No additional investigation



NRI-27	13	13-2-dp4g79f	2501034.2	284560.7	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-28	13	13-3-dp4g52f	2501093.3	284462.0	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-29	12	12-2-dp10g139f	2501126.3	284498.0	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-30	25	25-2-dp5g81f	2500475.1	284324.4	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-31	21	21-4-nm9g123f	2500723.5	284301.2	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-32	25	25-3-dp5g39f	2500529.8	284253.8	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-33	25	25-4-dp5g54f	2500573.5	284166.6	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-34	20	120-3-nm5g59f	2500813.6	284246.8	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation

NRI-35	19	19-2dp5g66f	2500911.3	284176.1	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation
NRI-36	17	17-4nm5g65f	2501051.0	284160.7	No	Low, signature suggestive of small diameter pipe, trap, anchor or other small modern debris. No additional investigation

Potentially significant targets are marked in bold. Red indicates high priority signatures and blue indicates moderate signature.